Consumer socialisation of over-the-counter medicines:

A study of adolescents in New Zealand and Malaysia

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Self- medication with over-the-counter medicines (OTCs) is common practice, not only for adults, but also among adolescents. Tapping into this potentially lucrative segment of adolescents as consumers will require marketers and academic researchers to understand this market well. The long-term benefits are worthy of focus as the buying patterns developed during teenage years are likely to continue throughout adult lives. Furthermore, as this population begins to age, they become a stronger customer base for pharmaceutical products. The majority of studies about OTCs have been conducted from the perspective of pharmacists or healthcare professionals in medical sociology, pharmacy practice and public policy. Very limited research has examined these products from consumer behaviour perspectives.

Using a consumer socialisation perspective, this thesis seeks to understand how adolescents learn to use OTCs. In this investigation, we examine a number of possible relationships such as the degree to which an adolescent's background may influence both the way s/he learns to be a consumer of OTC pharmaceuticals and consumption-relevant outcomes of knowledge, attitudes, and behaviours towards OTCs. In addition, the effect of socialisation agents such as family, peers, mass media, and medical personnel and retail

staff on OTC-relevant knowledge, attitudes, and behaviours is examined. We wished to understand similarities and differences between adolescents living in Malaysia and New Zealand with respect to this product class; and, lastly, we wanted to uncover the possibility of a mediation effect of consumer socialisation processes in the relationship between adolescents' backgrounds and OTC-relevant knowledge, attitudes and behaviours. Data was collected by way of classroom administration at high schools in Christchurch, New Zealand and Johor Bahru, Malaysia. A total of 509 (New Zealand n=276 and Malaysia n=233) usable responses were obtained.

Overall, the results of this study showed that self-medication with OTCs was widespread among respondents with a high percentage of them having purchased the medicines themselves. Results indicate that background variables, in general are marginally related to the influence of socialisation processes and consumption-relevant outcomes of knowledge, attitudes, and behaviours towards OTCs. While certain consumer socialisation processes influenced consumption-relevant outcomes, mediation effects were non-existent. Although some differences were noted between the cultures, overall, the results of this study suggest that New Zealand and Malaysian respondents were rather similar when it came to OTC-related consumer socialisation.

Keywords: consumer socialisation, adolescents, over-the-counter medicines, New Zealand, Malaysia, cross-cultural.

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Chapter 1
Introduction

1.1 Background of the study

An essential element of healthcare consumerism is self-care. Self-care is what people do for themselves to establish and maintain health, as well as to prevent and deal with illness (WHO, 1998). One important element of self-care is self- medication. Self-medication is the treatment of common health problems with medicines especially designed and labelled for use without medical supervision and approved as safe and effective for such use[1]. Medicines for self-medication are often called "non-prescription" or over-the-counter medicines (OTCs) and can be obtained legally without a doctor's prescription through pharmacies, grocery stores and other outlets. In most homes, many illnesses are initially treated with medicines that are easily obtainable to ease light symptoms such as headaches, colds and sore muscles (Albarrán & Zapata, 2008). Burgess (1998) reported back in the early 1970s a study by Knapp and Knapp which noted that analgesics, cold remedies and laxatives were frequently and commonly found in American homes, just like bread and milk.

In both New Zealand and Malaysia, self-medication with OTCs is also common. This is evident in the growth of the OTC market size in both countries. In New Zealand, from 2006 to 2010, OTC sales recorded growth of 23.6%, while in Malaysia, the product category recorded a growth of 28.3% (Euromonitor International, 2010). This figure is comparable to recent worldwide OTC's market growth of 24.8% (Euromonitor International, 2010). Despite this growth, little is known about adolescents as consumers

[1] Definition given by the World Self-Medication Industry (www.wsmi.org)

of these products as most research in OTCs has been conducted using adult samples. Results from the limited research that is available, however, show that the use of OTCs among adolescents is widespread (Rudolf, Alario, Youth, & Riggs, 1993; Stasio, Curry, Sutton-Skinner, & Glassman, 2008; Wilson, Singh, Blumkin, Dallas, & Klein, 2010). This cross-cultural study on how adolescents learn about OTCs in New Zealand and Malaysia was undertaken to provide an enhanced understanding of the way young people learn about these medicines, from a consumer behaviour/ consumer socialisation point of view. Ward (1974) defined consumer socialisation as a specific type of socialisation by which young people acquire skills, knowledge, and attitudes relevant to their functioning as consumers in the marketplace. This perspective has been applied not only in understanding consumer behaviour but in other fields as well. Topics have included, for example, adolescents' sexual behaviour (Moore, Raymond, Mittelstaedt, & Tanner, 2002) and leisure time activities (Arnon, Shamai, & Hatov, 2008).

It is worth conducting the current research for several reasons. First, from a marketing point of view, adolescents in both New Zealand and Malaysia represent a valuable market segment. Euromonitor International (2009) estimated that this consumer segment will make up 36.8% of the forecasted total population in Malaysia, and 26.2% in New Zealand in 2020.

Second, published studies on OTCs have primarily been based on medical sociology, pharmacy practice or public policy framework. There are few studies in the literature of OTCs from the consumer behaviour perspective. For example, consumer perceptions (Wazaify, Shields, Hughes, & McElnay, 2005) have been studied, as have usage patterns (Sinclair, Bond, & Hannaford, 2000) and decision making (Paddison & Olsen, 2008).

Yet, understanding these products from the consumer behaviour perspective is important for improving communications and developing strategies for both marketers and policy-makers. Ward and Tully (1998) as cited in Paddison and Olsen (2008) and (Lyon, 2001) have called for greater attention in OTCs research to be dedicated to the consumer behaviour point of view. Overall, these few studies suggest that it is worthwhile conducting further research on OTCs and adolescent consumer behaviour especially, bearing in mind the evolving nature of the OTCs market. It is especially important to understand this segment, as they constitute a large group of current, as well as future, consumers of these products.

Third, New Zealand is a developed nation, while Malaysia is a developing country. In 1996, Reinstein suggested that self- medication may be different in different countries, and especially so, when comparing developed to developing countries. In developing countries, people generally have less money to spend on health while governments, again generally are less able to provide health coverage (Reinstein, 1996), therefore people depend heavily on self- medication. It was expected, then, that there would be large differences in self-medication patterns and processes between places such as New Zealand and Malaysia. However, although classified as a developing country, Malaysia is quite similar to New Zealand in a number of ways. Malaysia's healthcare delivery system is publicly funded, as is the case in New Zealand. In terms of exposure via the media, in both countries OTCs are promoted through television, radio and print advertisements (Malaysian Medical Association, 2002; Norris et al., 2005) and media accessibility is high in both settings (Comrie, Vaccarino, Fountaine, & Watson, 2007; Euromonitor International, 2007; Marshall, Potter, & Lee, 2006). Information about OTCs can also be accessed via the internet (Gurau, 2005). Both countries have excellent internet

infrastructure (Marshall et al., 2006). Though similar in exposure and accessibility, previous research has indicated the pattern of media usage is dissimilar (Comrie et al.,2007; de Mooij, 2010; Sabri & Masud, 2005). With regard to OTC distribution, both countries sell through pharmacies, supermarkets and grocery stores, although the range of products sold in each of these outlets are likely to be different. It should also be noted that generally, OTCs in Malaysia are sold by brand name. This is especially so in supermarkets and convenience stores, while in New Zealand, generic brands are also widely available. For example, paracetamol is widely available in generic form in New Zealand's supermarkets. In Malaysia the product is mostly sold by its brand name, e.g. Panadol. The classification of medicines as OTCs is also almost identical in both countries (www.medsafe.govt.nz; www.pharmacy.gov.my; Euromonitor International, 2010). It is therefore interesting to investigate whether young consumers in two nations, one developed and the other developing, but having similar accessibility to healthcare and exposure to OTCs, will learn about OTCs in the same way.

Fourth, the issue of social structure provides an interesting basis for comparisons. Hofstede (1980) has documented that New Zealand is an individualistic nation, whereas Malaysia represents a collectivist nation. In addition, Bush et al. (1999) have proposed that socialisation influences will vary across ethnic groups and cultures. Therefore, there is a need to conduct research in specific cultural settings so that similarities and differences between cultures can be compared. Most studies in international cross-cultural consumer socialisation have been conducted in the United States (US) and Japan; (examples include Rose, Boush and Shoham (2002) and Rose (1999). Although the United States is an individualistic nation similar to New Zealand, these countries have distinctly different cultures. New Zealand society consists mainly of those of European

background (67.6%), Māoris (14.6%), Asians (9.2%), Pacific Islanders (6.9%) and others (1.7%) make up the remaining ethnic categories (Statistics New Zealand, 2006). Malaysia consists of Malays, the dominant group representing 60% of the population, followed by Chinese (30%), Indians (8%) and others (2%), including the indigenous group *Orang Asli* (Department of Statistics, Malaysia). Different cultures exhibit different norms and values, and as a result the content and sources of learning experiences are expected to differ (Moschis, 1987). Conducting this research in two different settings can enhance our theoretical understanding and produce testable propositions across-culture (Singh, Kwon, & Pereira, 2003).

Finally, although there has been an inspiring body of knowledge about consumer socialisation of adolescents, the majority of these studies have focused on the US. While such studies are useful, there is a great need to investigate non-US adolescents to predict their future behaviour in the global market. The use of New Zealand and Malaysia offers an excellent basis for comparison with other countries that have similar characteristics. Indonesia and Brunei, for example, have similar characteristics to Malaysia in terms of ethnicity, culture and religion, whilst New Zealand has numerous similarities to Australia.

In order to examine these questions, it is necessary to have an understanding of the context for this study. The next section provides background information about healthcare delivery and pharmaceuticals in both countries.

1.1.1 New Zealand

Healthcare in New Zealand is publicly funded through tax revenue. The care provided by family doctors, General Practitioners (GP), is partially subsidised by the government but

in most cases patients still need to co-pay for each visit. The fee, which is set by the GP, varies from clinic to clinic and ranges from NZD35 to NZD75. New Zealand residents also receive a public subsidy for prescription drugs. PHARMAC, a government agency, decides which medicines will receive a full or partial government subsidy. In general, adults in New Zealand will pay NZD3 per item for subsidised medicines from a community pharmacy or up to NZD15 if the prescription is prescribed by a specialist. Children under six years are eligible for free prescription medicines. Nonetheless, some drugs are not subsidised, and consumers must pay for them.

A study by the Commonwealth Fund (2007) in New Zealand reported that 30% of New Zealanders were very confident that they would get quality and safe care if they visited a GP, while 19% said that they had a medical problem but did not visit the doctor due to cost. In terms of accessibility, 53% of the respondents reported being able to see a doctor on the same day as requested, but 43% indicated difficulty in getting care at nights, weekends or holidays without going to an emergency room. Overall, however, the respondents were satisfied with the quality of the medical care delivered in the previous year.

Despite the subsidies and the satisfaction with the healthcare delivery system, self-medication remains essential. This is apparent in the OTCs' market size, cost and accessibility issues, as discussed earlier. There are a number of laws such as the Medicine Act 1981, the Misuse of Drug Acts 1975 and the Pharmacy Act 1970 that oversee the use, access, distribution, marketing and sales of medicines in New Zealand. MEDSAFE, an office of the Ministry of Health, is the main government authority involved in the maintenance and design of medicine regulation. This unit administers the Medicines Act

1981 and part of the Misuse of Drugs Act 1975 and their accompanying regulations. The Medicines Act 1981 governs the manufacture, sale and distribution of medicines, medical devices and related products in New Zealand. This act stipulates four classifications of medicines: i.e. prescription medicines; restricted/pharmacist-only medicines (medicines sold without prescription, with the sale made in a pharmacy by a registered pharmacist); pharmacy-only medicine (medicines available only in registered pharmacies but not requiring a specialist consultation with a pharmacist prior to purchase). Medicines in each of these classification categories are listed in the First Schedule to the Medicine Regulations 1984. The last classification is general sales medicines. These are not listed in the First Schedule and may be sold in any outlet (www.medsafe.govt.nz).

Medicines are classified according to their active ingredients and classification changes can occur approximately every six months. The Medicines Classification Committee, comprising two nominees from the New Zealand Medical Association and the Pharmaceutical Society of New Zealand and two members from the Ministry of Health, will consider factors such as consumer convenience, potency, current availability, therapeutic index, toxicity, abuse potential, inappropriate use, precautions and communal harm when reviewing a medicine for reclassification for sale (www.medsafe.govt.nz).

1.1.2 Malaysia

The main public healthcare provider in Malaysia is the Ministry of Health (MOH), which supplies approximately 80% of healthcare services in the country (Euromonitor International, 2011; Gross, 1999). The MOH provides primary, secondary and tertiary care through various types of health facilities such as general hospitals, district hospitals and health clinics. Public health services are subsidised enormously by the government.

For example, primary care services at health clinics are almost free of charge, with patients only charged a nominal fee of RM1 (approximately equivalent to NZD0.40) for the consultation and any medicines prescribed.

Although healthcare delivery is affordable and widely available in Malaysia, two national surveys conducted by the MOH in 1995 and 1997 revealed that more than half of the respondents practised self-medication (Hussain, 1999). An earlier study by Fook (1994) showed that 20%-40% of the respondents would seek OTC treatments for minor ailments. The use of OTC medicines in Malaysia is favoured for skin conditions, general healthcare, aches and pains, and problems affecting the eyes, ears, mouth, gastrointestinal and respiratory tracts, with a doctor being consulted if self-medication fails (Ibrahim, 1996). A recent report by Euromonitor International (2011) supports these studies. Sales of OTCs in Malaysia are delivered through various channels from pharmacies to retail outlets such as Chinese medical shops, supermarkets, minimarkets, convenience stores, petrol kiosks and news stands. Many consumers prefer to buy OTC medicines from places other than a pharmacy, with pharmacy purchases being generally associated with multivitamins, wound-care products and prescription drugs (Hashim et al., 2007).

OTCs in Malaysia are governed by a number of laws. These include the Sale of Drugs Act 1952 (Revised 1989), the Poison Act 1952 (Revised 1989), the Dangerous Drug Act 1952 (Revised 1980), and the Medicines (Advertisement and Sales) Act 1956 (Revised 1980) (www.pharmacy.gov.my). The Pharmaceutical Services Division of the Ministry of Health Malaysia ensures that the manufacture, importation, sale, supply and management and use of pharmaceuticals, cosmetics and healthcare products are conducted according to the acts listed above.

Under the Poison Act 1952 (Revised 1989), pharmaceutical products in Malaysia are classified into four groups. The Group A category consists of non-poisonous items that can be bought almost everywhere and are often referred to as OTC medicines. Groups B, C and D are listed under poisonous items. Drugs in Group B comprise poisons that can only be prescribed by doctors, while Group C are those that can only be prescribed by doctors and sold only in pharmacies. Group D drugs can only be sold by licensed pharmacists and the sale must be recorded in the "Poison Book".

1.2 Problem statement

The practice of self-medication with OTCs has recently become increasingly popular for several reasons. These include products being shifted from prescription to non-prescription status, trends toward self-care, consumer convenience, savings in time and money in not having to visit a physician and growing consumer sophistication (Amoako, Richardson-Campbell, & Kennedy-Malone, 2003; Blenkinsopp & Bradley, 1996; Eagle & Chamberlain, 2001; Gore, Madhavan, McClung, & Riley, 1994). This increasingly popular practice, however, has several implications. Consumers may not have adequate knowledge or ability to judge potential benefits and risks (Gore et al., 1994; Sansgiry & Cady, 1996). They may perceive that these medicines are safe as they are easily accessible and can be purchased without prescription. These medicines can have adverse effects if used in higher dosages than recommended, in combination with other drugs or when based on an incorrect self-diagnosis (Burak & Damico, 2000; Ellen, Bone, & Stuart, 1998). There is also the potential for misuse and abuse (Hughes, McElnay, Hughes, &

McKenna, 1999; Wazaify et al., 2005). The risks of improper use of OTCs are especially worrisome and may defeat the benefits of OTC medications.

In comparison with other types of drugs, OTCs can be easily accessed and purchased without the need to show identification or proof of age, unlike alcohol or cigarettes. It is evident from previous studies that the use of OTCs to self-medicate is common among adolescents (Rudolf et al., 1993; Stasio et al., 2008; Wilson et al., 2010). OTC medications are commonly used by adolescents for headaches, stomach-aches, ear and throat pain, muscle, joint and back pain, coughs and colds and menstrual pain (Chambers, Reid, McGrath, & Finley, 1997; Dengler & Roberts, 1996; Holstein, Hansen, & Due, 2004). The most commonly used OTCs taken by adolescents are analgesics, antihistamines or decongestants (Rudolf et al., 1993; Westerlund, Brånstad, & Westerlund, 2008). It is evident from previous research that youths have not only used these medications properly, i.e. to treat illness, but that they have also used them improperly, such as in cases of misuse (Ellen et al., 1998; Rudolf et al., 1993) or abuse (Chambers et al., 1997; Dengler & Roberts, 1996; Ellen et al., 1998). Their lack of ability to judge the potential benefits and risks may result in harm.

Generally, teenagers are less familiar and have less experience with products as compared to older consumers (Mangleburg, Grewal, & Bristol, 1997). They may be less aware of OTC risks than adults (Myers, 1992), have less knowledge (Wilson, 2010) and may simply take more of the medicines than the label recommends (Ellen et al., 1998). Due to their lack of knowledge, many adolescents underestimate or do not realise the fatal potential of an OTC overdose (Myers, Otto, Harris, Diaco, & Moreno, 1992). This suggests there is a need to understand how their knowledge, attitudes and behaviours as

consumers are formed. Thus, issues such as with whom they interact about OTCs and which media they would choose as sources of information are addressed in this study taking a consumer socialisation perspective.

1.3 Objectives of the study

Generally, the aim of this study is to conceptualise and empirically investigate consumer socialisation of this product category in two countries in order to advance understanding of consumer behaviour and pharmaceuticals disciplines. Specifically there are five objectives of this study. The first is to examine the degree to which an adolescent's socioeconomic, family or religious background may influence how he or she learns to be a consumer of OTC pharmaceuticals. The second objective is to examine the degree to which an adolescent's socioeconomic, family or religious background may influence consumption-relevant outcomes of knowledge, attitudes, and behaviours towards OTCs. The third objective is to examine the effect of consumer socialisation processes[2] on the consumption-relevant outcomes of knowledge, attitudes, and behaviours towards OTCs. The fourth objective then, is to examine and compare consumer socialisation of adolescents living in Malaysia and those in New Zealand with respect to OTCs. The final objective is to examine the possible mediation effect of consumer socialisation variables in the relationship between adolescents' background and knowledge, attitudes and behaviours towards over-the-counter pharmaceuticals. These five objectives are addressed through relevant hypotheses which are presented and discussed in Chapter 3 (Conceptual Framework and Hypotheses Development).

[2] Socialisation processes in this study include family communication patterns, peer influence, mass media usage and communication with medical and retail staff.

1.4 Significance of the study

This research will make contributions in the area of consumer socialisation and the study of over-the-counter medicines from both academic and practical perspectives. From an academic perspective, this research is a blend of two academic fields in that it contributes to the body of knowledge in both the pharmaceuticals and consumer socialisation fields. Kernan and Domzal (1997) suggested that the field of medicines was no longer limited to health professionals, but others from disciplines such as the social sciences also have the ability to influence the wellness of individuals and society. The findings of this present study provide empirical evidence of; adolescents' OTCs usage, the process by which they learn to become consumers of OTCs, the effect of their background on the learning process; the effect of their background on their knowledge, attitudes and behaviours towards OTCs; and the influence of socialisation processes on their knowledge, attitudes and behaviours. An additional theoretical contribution of this study comes from its attention to cultural factors.

From a practical standpoint, knowing where adolescents obtain their medications, with whom they interact about the medicines and which information sources they use, can assist healthcare professionals in identifying where they need to target their information dissemination. For policymakers, understanding the process of how young people learn about these types of medications will help them in designing their policies and educational campaigns and programmes to address the issues found to be associated with over-the-counter medicines. For pharmaceutical marketers, understanding adolescents' OTCs' socialisation will help them to direct appropriate marketing communication strategies to

agents or parties who have the most influence over, and the greatest likelihood of reaching adolescents.

1.5 Organisation of the thesis

The thesis is organised as follows. This introductory chapter is followed by a review of the research literature. The review is divided into two sections. Section one discusses adolescence and the importance of studying adolescents in relation to OTCs. The second section combines the literature regarding consumer socialisation theory, as the foundation of the thesis and the relevant OTCs literature. Based on this literature review, a conceptual model and hypotheses are developed in Chapter 3. Chapter 4 discusses the research methods, detailing the choice of research approach, data collection strategy, research instrument, sampling process, the conduct of fieldwork and the appropriate statistical procedures used for testing the hypotheses. Chapter 5 presents descriptive analysis, data analysis and a discussion of the results. Chapter 6 concludes the results and limitations are discussed. This final chapter also discusses research implications and offers possible future research avenues.

1.6 Chapter summary

This chapter has provided an introduction to the issue of adolescents' consumer socialisation of OTCs in two countries. Some background on the healthcare delivery system in both countries has been discussed to give an indication as to why self-medication with OTCs is common, despite publicly funded healthcare services in both environments. In terms of regulation, both countries have strict regulations concerning

pharmaceutical products and the types of medicines that fall under the OTCs category are relatively similar.

This chapter also provided some general ideas about the importance of studying adolescents as consumers of OTCs. A further in-depth discussion about this issue will be presented in the next chapter. In summary, this chapter has outlined the rationale for this study.

Chapter 2
Literature Review

The purpose of this chapter is twofold. First, to gain a better understanding of the subjects under study and second, to provide the framework for the current study's design. This chapter provides a review of the relevant literature regarding adolescents including the economic power of the adolescent market, adolescents as OTC consumers, consumer socialisation and OTCs.

2.1 Adolescents

The concept of adolescence differs across countries and cultures, most probably because cultures vary in how they define adult status and adult roles and responsibilities (Arnett, 2001). There are many definitions as to what adolescence is, when it occurs and the processes by which it occurs. Crockett and Petersen (1994) described adolescence as a process of transition between childhood and adulthood, that is, a time during which young people continue to develop the social and intellectual skills to prepare them for adult roles and responsibilities. Adolescence is also viewed as a period of life that begins with puberty and that ends when young people are prepared to take up adult roles (Arnett, 2001; Feldman & Elliot, 1990).

Feldman and Elliott (1990) defined early adolescence as between ages 10 to 14, middle adolescence between ages 15-17 and late adolescence from age 18 to the mid-20s. Some scholars argue about these age parameters. The definition of the World Health

Organisation (WHO) (1992) [3]is adopted in this study as it provides a comprehensive meaning, covering both the biological and psychological aspects, as well as the influence of culture and society. Based on these criteria, WHO defines adolescence as the time of life between the ages of 10 and 19 years.

2.1.1 The economic power of the adolescent market

From a marketing perspective, adolescents are interesting to study for several reasons. In the US, Zollo (2004) speculated that adolescents are an important target for marketers because they have discretionary spending power, spend family money, influence their parents' spending, will spend money in the future, are societal trendsetters, and a large population in and of themselves. Adolescents' buying power is substantial. Zollo reported that in 2002 American teens spent USD109 billion of their own money and USD61 billion of their parents' money. This demonstrates that they play an important role in the economy. Similarly, both in New Zealand and Malaysia, adolescents represent an important socioeconomic segment of the population. Adolescents in Malaysia and New Zealand will make up 36.8% and 26.2% respectively, of the forecasted total population in 2020 (Euromonitor International, 2009). Given their ability to spend and influence the spending of others, this market segment is potentially a lucrative one to target.

Clearly, today's adolescents possess large amounts of disposable income from their own funds or parental allowances (Wright, 2006). In New Zealand, it is not unusual for

[3] Adolescence is the period of transition from childhood to adulthood, and is represented (a) by efforts to achieve goals related to the expectation of the mainstream culture; and (b) spurts of physical, mental, emotional and social development. This transition has three cumulative factors i.e. biological development (the commencement of puberty to full reproductive maturity), psychological development (the cognitive and emotional stages of childhood to those of adulthood) and the emergence from total socio-economic dependence to one of relative independence. Based on these criteria, therefore adolescence is the time of life between the ages of 10 and 19 years. This age range generally encompasses the commencement of puberty through to the legal age of majority. (Moreillon, 1992.p 420)

adolescents to have part time employment. A report by the Department of Labour New Zealand indicated that as of December 2008, 54% of youth aged 15 to 19 participated in the labour market. Darling, Reeder, McGee, and Williams (2006) found that approximately 40% of New Zealand high school students were in part time employment. Therefore, these students have discretionary income of their own to spend (Euromonitor International, 2011). It was also reported that the teenage consumer segment in New Zealand has experienced a growth of 2.5% over the period of 2005 to 2010 (Euromonitor International, 2011). Only a few studies were found in Malaysia regarding high school students earning their own income (Said & Hussin, 2006; Yusuf & Ali, 2007), and the numbers were not significant. It is therefore assumed that the majority of Malaysian adolescents of school age are spending only their parents' money. As the standard of living among Malaysians has increased, as indicated by its rapid economic growth (Euromonitor International, 2009), adolescents in Malaysia are gaining greater freedom from their parents to make their own shopping and consumption decisions (Kamaruddin & Mokhlis, 2003). It was also reported that shopping has become one of the leisure activities most participated by Malaysian adolescents (Othman & Sim, 1993).

The buying power of young consumers can be seen from the fact that they are the target of a substantial volume of mass media coverage and advertising. Marketers spend millions of dollars to reach this lucrative market segment. Academics have also conducted numerous studies on teenagers as consumers (Churchill & Moschis, 1979; Hiral, Martin, & Chris, 2005; Thomas Tan Tsu, 1999; Tootelian & Gaedeke, 1992). Such abundant effort is arguably due to the fact that the consumption patterns developed during the teenage years will continue throughout adult lives (Moschis, 1985) and are obviously

related to the ability to spend and the increasing contributions made to parents' buying decisions.

2.1.2 Adolescents and OTCs

Previous studies have indicated that the use of OTCs among adolescents is common. For example, Dengler and Roberts (1996) reported that adolescents aged 14 to 15 years acted independently and were making their own decisions concerning what OTCs to take and when. Another study by Rudolf, Alario, Youth, and Riggs (1993) conducted at a residential summer camp found almost half of the children had OTCs with them. Forty-three percent of these children were young campers, aged nine to 12, and 53% were older campers, aged 13 to 16. Of those who brought medicines, 31% had no medical record of need or any indication of the family's intention to send medicine, 47% took at least one medicine without adult supervision, and 21% reported sharing their medicines with others. It was also reported that 77% of the older campers and 31% of the younger campers when at home, independently decided on the need and self-administered medications. Almost all the children in the study, 92%, indicated feeling comfortable taking medicines without telling an adult. Another study confirmed that self- medication among adolescents is widespread. Chambers, Reid, McGrath, and Finley (1997) reported that adolescents took an OTC for pain without first checking with an adult. It may be desirable for adolescents to assume responsibility for their own healthcare, however adequate education must also be provided to avoid risks. Although these studies are not recent, there is little reason to doubt that today's adolescents can and do use OTCs in similar ways (see summary Table 2-1).

The most common OTC medications used are in the analgesic, antihistamines or decongestants categories (Rudolf et al., 1993; Westerlund et al., 2008). Analgesics were the OTCs most frequently used by Swedish high school students, where acetaminophen (paracetamol) accounted for 46% and ibuprofen for 27.8% of painkillers taken (Westerlund et al., 2008). Acetaminophen was also commonly used by respondents in Chambers et al.'s (1997) study. Other types of OTCs used by respondents in that study included ibuprofen and acetaminophen, or aspirin with codeine, as well as antihistamines and decongestants, though such usage was quite rare. Subjects reported that these OTCs were mostly used for headaches, followed by stomach pain, ear and throat pain, muscle, joint, and back pain, as well as menstrual pain (Chambers et al., 1997).

Previous studies also document that adolescents may use OTCs for off-label purposes. About one in ten American teens has abused OTC medications, which accounts to somewhere between two to four million teenagers in that country (Feinberg, 2006). The most typical OTC medications abused were dextromethophan (DXM), also known colloquially as Dex, DXM, Robo, Skitles, Triple-C, or Tussin. The author reported that DXM is found in over 120 OTC products and is increasingly used by adolescents recreationally. As a result, Health and Medicine Week reported that the United States Senate passed a resolution designating August 2007 as "National Medicine Abuse Awareness Month" (Suydam, 2007). The resolution encourages parents to educate themselves and discuss with their teens the dangers related to medicine abuse (Levy, 2007). Overuse of OTCs was also discovered in Ellen, Bone, and Stuart's (1998) study with 36% to 88% of the respondents taking more drugs than the label recommended. Some adolescents reporting taking as much as ten times the specified dose for bronchodilators, 21 times the specified dose for caffeine tablets, seven times more than the

specified dose for cough syrup and eight times more than the specified dose for ibuprofen, on at least one occasion. In this study, they also found that some respondents intentionally overuse the product (due to the belief that OTCs are harmless or relatively ineffective), some unintentionally overuse the product (misconception of the appropriate dosage) and some respondents use OTCs for recreational uses.

Adolescents generally have poor knowledge of OTCs' potential side effects. Many are unaware of OTCs' toxicities when taken in a large amount at once (Huott & Storrow, 1997) and underestimate the potential lethality of an acetaminophen overdose (Myers et al., 1992). A recent study by Wilson, Singh, Blumkin, Dallas, and Klein (2010) found that fewer than 50% of adolescents in their study answered knowledge questions about OTCs correctly. Due to lack of knowledge, they may also use an OTC inappropriately for their ailment. For example, some used ibuprofen and aspirin for stomach pain, which may irritate the stomach lining (Chambers et al., 1997). The poor knowledge of OTC medications and low awareness of the risks has resulted in drug- related problems (Westerlund et al., 2008). Further, adolescents may not always seek advice from a pharmacist when purchasing OTCs (Sansgiry & Cady, 1996).

The literature reviewed above shows that OTCs usage among adolescents is common, either for proper or improper uses. Table 2-1 provides a summary of selected studies of adolescents' OTCs.

Table 2-1: Summary of the research findings and location of studies on adolescents and OTCs

Study	Findings	Location
Myers et al. (1992).	40.5% of the respondents underestimated or did not realize the fatal potential of acetominophen in overdose.	US
Rudolf et al. (1993)	Research conducted at a residential summer camp. Almost half of the children had OTCs with them. Of those who brought medicines, 31% had no medical record of need or any indication of the family's intention to send medicine, 47% took at least one medicine without adult supervision and 21% reported sharing their medicines with others. 77% of the older campers (13-16 years) and 31% of the younger campers (9-12 years) when at home, independently decided on the need and self-administered medications. 92% of the campers indicated feeling comfortable taking medicines without telling an adult.	US
Dengler and Roberts (1996).	Adolescents aged 14 to 15 acted independently and made their own decisions concerning what to take and when to use OTCs. OTCs' use is not related to socioeconomic status, race, alcohol and tobacco.	UK
Chambers et al. (1997)	58% to 95% of adolescents took an OTC for pain without first checking with an adult. Acetaminophen was the most common. Other types of OTCs used include ibuprofen and acetaminophen, or aspirin with codeine, as well as antihistamines and decongestants, though such usage was quite rare. These OTCs were mostly used for headaches, followed by stomach pain, ear and throat pain, muscle, joint and back pain as well as menstrual pain. Several inappropriate uses were also reported. The most common sources of information on OTC medication were parents, followed by label, physicians and nurses.	Canada
Huott and Storrow (1997)	Many of the OTCs that were potentially lethal in overdose were not recognised by adolescents, while OTCs that were nonlethal were considered by adolescents to be potentially lethal. Of the five respondents who indicated that they had ever had suicidal thoughts, all had ingested some item (analgesics, ibuprofen & asprin)	US
Ellen et al. (1998)	36% to 88% of the respondents took more drugs than the label recommended. Some adolescents reporting taking as much as 10 times the specified dose for bronchodilators, 21 times the specified dose for caffeine tablets, seven times more than the specified dose for cough syrup and eight times more than the specified dose for ibuprofen, on at least one occasion. Some respondents intentionally overused the product (misconception of the appropriate dosage), some unintentionally used the product (due to the belief that OTCs are harmless) and some respondents used OTCs for recreational uses.	US

Stephens and Johnson (2000)	Respondents reported that they relied on informal care providers such as family and friends for information when purchasing OTCs. In the purchase of cold/allergy OTCs, brand names or television commercials did not influence their purchase decision. Information regarding price was the most important when they read the product label.	US
Bryner et al. (2006)	Abuse of solid dose forms increased more dramatically compared to liquid formulation. Coricidin HBP Cough & Cold tablets were the most commonly abused, followed by DXM-containing Robitussin formulation. Factors contributing to the increasing trend include: DXM in multiple OTC cough and cold products are sold legally at pharmacies and groceries and are relatively inexpensive, the false perception that a high dosage is not dangerous, it is easy to fool parents because such products are kept in the house, numerous websites promote DXM abuse and peer pressure.	US
Feinberg (2006).	Somewhere between two and four million teenagers have abused OTCs. The most typical OTCs abused is DXM. It is not clear how abuse was defined here. The author highlighted that the costs of not educating patients and of not limiting access to OTCs are too high.	US
French and James (2008)	25% of those using analgesics reported exceeding the maximum dose. Only 18% of the sample thought there were short-term risks in using mild analgesics, while half thought there were long-term risks.	UK
Stasio et al. (2008)	74.1% of the sample used OTCs of whom 61.2% reported concurrent use of OTCs and herb or dietary supplements.	US
Westerlund et al. (2008)	The most frequently used OTCs are acetaminophen and ibuprofen. The most common sources of recommendation were parents, followed by physician, pharmacist and advertising. Drug-related problems were experienced by 31.1% of female and 19.6% of male students.	Sweden
Morales-suárez-varela et al. (2009)	38% reported frequent use of OTCs. No association was found between the use of OTCs and gender, practicing sport, reading magazines, family status and presenting a chronic pathology	Spain
Wilson et al. (2010)	The most frequently reported OTCs were analgesics. The average overall knowledge score was 44%. Most adolescents used analgesics but confused generic and brand names. There were significant knowledge gaps about OTCs use, side effects and contraindication.	US

As seen in Table 2-1, most of the studies were conducted in the United States, indicating the need to conduct similar studies in other countries such as New Zealand and Malaysia. Such overseas studies will be likely to yield insight into adolescents' consumption of

OTCs. To understand this, the researcher employed a consumer socialisation perspective. The following sub-sections will combine the literature regarding consumer socialisation with the relevant OTCs literature to propose a useful linkage between the two.

2.2 Consumer Socialisation Framework

Consumer socialisation has generated a significant amount of research since it was first introduced by Ward (1974). He defined consumer socialisation as the processes by which young people acquire skills, knowledge and attitudes relevant to their functioning as consumers in the marketplace. It is a specific type of socialisation that focuses on how individuals become consumers. Prior studies in consumer socialisation have been generally based on two schools of thought; the cognitive developmental model and the social learning model. The cognitive development model, stemming from Piaget's (1970) work, suggests that the formation of consumer skills, knowledge and attitudes is a function of qualitative changes in cognitive development. In contrast, the social learning model emphasizes the sources of influence, i.e. socialisation agents who transmit norms, attitudes, motivations and behaviours to the learner. Moschis and Churchill (1978) developed the first conceptual consumer socialisation model encompassing both the cognitive developmental perspective and social learning theory. Since then, the Consumer Socialisation Theory has been applied not only to understanding consumer behaviour but in other fields such as sexual behaviour (Moore et al., 2002) and leisure-time activities (Arnon et al., 2008). The model, which provides the conceptual guidelines for this study, is illustrated in Figure 2-1

(From Moschis and Churchill, 1978)

Figure 2-1: A conceptual model of consumer socialisation

The conceptual model is organised around three main elements; the antecedents, the socialisation process and outcomes. Social structural variables and age or life-cycle position are antecedents to the socialisation processes. Social structural variables include factors such as social class, family structure and ethnicity. These factors provide the social setting within which the learning takes place and, therefore, can affect an individual's learning both directly or indirectly through the socialisation process (Moore & Stephens, 1975; Ward, 1974). Age or life-cycle position refers to a person's place in the lifetime span during which learning occurs. Similar to social structural variables, age or life-cycle position might influence learning in a direct or indirect manner.

The socialisation process components incorporate both the socialisation agents and the type of learning. A socialisation agent can be a person, organisation or institution that influences the learner because of their frequent contact with the individual. These agents transmit norms, attitudes, motivations and behaviours to the learner during exposure to the

individual (Moschis & Churchill, 1978). They can be family members, friends, neighbours, teachers, social organisations or anyone who has influence over the individual because of their frequency of contact and control over the reinforcement and punishment given to the individual. These agents influence the learner through three types of learning: modelling, reinforcement and social interaction. Modelling involves imitation of the agents' behaviour, and is also known as observational learning. Reinforcement involves either reward (positive and negative reinforcement) or punishment used by the agent (Moschis & Churchill, 1978). Social interaction is a combination of both modelling and reinforcement, such as conforming to peer group norms of purchase and consumption (Gunter & Furnham, 1998). Finally, the outcomes of the socialisation process are cognitive and behavioural learning properties.

In the early years after its introduction, the focus of study in consumer socialisation was on children. However, over the years it has been used to understand other groups of consumers such as adolescents (Churchill & Moschis, 1979; Foxman, Tansuhaj, & Ekstrom, 1989; Lueg, Ponder, Beatty, & Capella, 2006) and the elderly (Smith & Moschis, 1985). This followed the work of Moschis (1987), who pointed out that the consumer socialisation perspective can be used in studying consumer behaviour throughout a person's life-cycle. The following sections will discuss studies in consumer socialisation in more detail.

2.2.1 Antecedent variables

Antecedent variables consist of social structural variables and age/life-cycle positions. As indicated earlier, these variables may affect an individual's learning both directly or indirectly through the socialisation process.

2.2.1.1 Social structural variables

Social structural variables are associated with the social environment in which an individual's learning occurs. These include demographic variables such as social class, ethnicity and family size.

Social class or socioeconomic status may affect learning properties as well as the development of such learning, i.e. the socialisation process. Differences in socioeconomic status may result in differences in individuals' purchasing power and choices. This situation may influence their acquisition of consumer skills (Hayta, 2008). For example, adolescents in low socioeconomic status families evaluate a product differently from those in high socioeconomic status families. The places they shop also differ. While adolescents in lower socioeconomic status families primarily shop at discount stores, the upper class socioeconomic status adolescents shop at speciality and department stores (Page & Ridgway, 2001).

Studies have documented that socioeconomic status has different effects on the way adolescents communicate with family, peers, media and their school (Gerris, Maja, & Janssens, 1997; Nguyen, Moschis, & Shannon, 2009). The fact that people of lower socioeconomic status are more likely to have jobs and social roles that require comformity rather than self direction, influences the values they have, which are thought to then influence their offspring (Kasser, Ryan, Zax, & Sameroff, 1995). They in turn became parents who want their children to conform to their value system. In other words, they

exercise a socio-oriented type of family communication pattern[4]. This line of reasoning is empirically supported by Nguyen et al. (2009) in their study in Thailand. A study among Dutch parents found that the higher the educational and occupational levels (which indicates a higher socioeconomic status), the more parents enhanced child autonomy and the less they demanded their child's conformity (Gerris et al., 1997). This is similar to a concept-oriented type of family communication pattern. In essence, it can be assumed that those of higher socioeconomic statuses are more likely to exercise a concept-oriented type of family communication. An earlier study, however, found socioeconomic status to have a negative, but insignificant, impact on family communication (Churchill & Moschis, 1979).

Socioeconomic status serves as a positive predictor of receptiveness to TV commercials and the reading of printed media (Shim, 1996). Adolescents in the higher social class categories read both advertisements and news items in newspapers for consumer information more frequently (Moschis, 1987). They also interact with their peers more frequently than their counterparts (Moschis & Moore, 1978). However, they are less receptive to school education about consumption matters (Kamaruddin & Mokhlis, 2003).

Adolescents' consumer learning may differ by socioeconomic status. As a result of the increased opportunities that adolescents from high socioeconomic status families have for consumption, they are better able to manage their consumer finances than their lower socioeconomic status counterparts (Moschis & Churchill, 1978). This makes them more aware of their consumer environment as well as the availability of products in the marketplace and affords them greater brand knowledge (Moschis, 1987; Moschis &

[4] Please refer to sub-topic 2.2.2.1 for further explanation of both socio-oriented and the concept-oriented family communication patterns.

Moore, 1979). In contrast to this, a more recent study by Page and Ridgway (2001) found children in higher socioeconomic status families did not have greater brand knowledge as compared to their lower counterparts; they instead have different knowledge about brands. Respondents in the upper social class were familiar with designer labels and expensive brands, while respondents of lower socioeconomic status were more familiar with store brands (Page & Ridgway, 2001). Such differences reflect the dissimilarities in the environments in which they socialised. Children seem to be more familiar with the brands that are offered in their immediate consumer environment.

Scepticism is defined as a consumer's negatively positioned attitude toward motives and claims made by advertisers and marketers (Boush, Friestad, & Rose, 1994). Understanding socioeconomic status helps in explaining variations in general attitudes towards advertising (Moore & Stephens, 1975) as monetary constraints force adolescents from low income families to critically evaluate advertisers' claims, thus making these young consumers sceptical about advertising. Having a level of scepticism may assist in gathering, processing and interpreting marketplace knowledge, thereby producing better consumers. For that reason, the concept of scepticism is discussed at different points throughout this chapter to help readers better understand the consumer socialisation framework.

In the OTC context, the tendency of an adolescent to self- medicate appears to vary with socioeconomic factors. Gore et al. (1994) discovered that the higher the education level and family income, the lower the involvement of the consumer in the OTCs purchase decision, which meant the buyer did not search extensively for information, or may rarely have evaluated alternatives or choices, before making the purchase decision. This is

possibly due to educated people feeling that they already have a great deal of knowledge about OTCs and the ability to purchase them correctly. Furthermore, the cost of OTCs is not substantial with respect to higher income consumers and, therefore, these consumers may not engage in "high involvement" shopping behaviour. Two national surveys conducted among adults in Malaysia, in 1995 and 1997 revealed that self-medication with OTCs was more common among those with higher education (Hussain, 1999). However, the type of drugs (prescribed, OTC painkillers and OTC cough and cold medicines) used by adolescents did not have any association with socioeconomic status (Dengler & Roberts, 1996).

Researchers have also investigated whether the amount of money available to children has any effect on the process of consumer socialisation. Dotson and Hyatt (2005) discovered that the less money available, the more susceptible adolescents were to parental influence, possibly indicating a higher overall level of dependency. However, when they received larger allowances from parents, they were more likely to display an impulsive and careless consumer style (Shim, 1996). In contrast, Moore and Stephens (1975) found that when adolescents spent more money weekly, they acquired better consumer skills, such as enhanced price accuracy. Adolescents who spent more money from various sources (a combination of work, parental allowance, and others) were less likely to discuss consumption matters with their parents (Moore & Moschis, 1978). Working adolescents also tended to display more perfectionist and higher quality-conscious consumer styles (Shim, 1996). Overall, it appears likely that the amount of money available to teenagers may relate to the process by which they learn to become consumers.

The type of family structure is an important determinant of the socialisation process (Bush et al., 1999). The different environments experienced by adolescents in different family structures are likely to produce differences in socialisation and its outcomes. Adolescents from single-mother families participate more in family consumer decisions and tasks (Lachance, Legault, & Bujold, 2000). Compared to children raised in dual parent households, children raised in single family households shop alone for the family more often (Ahuja, Capella, & Taylor, 1998). This could be the result of a single mother facing the challenges of fulfilling family functions alone, and therefore relying more on her children to do various tasks. As far as the socialisation agent is concerned, Moschis (1987) suggests family distruption promotes adolescents' isolation from the family resulting in adolescents being more attracted to, and therefore socialising more with non-familial influences such as peers and mass media. In contrast, Dawn (1982) discovered that adolescents from both nuclear and single parent families were more influenced by parents than peers, indicating differences in family structure did not make any difference to the way adolescents communicate with their families. In line with this, Benmoyal-Bouzaglo and Moschis (2009) found that the frequency of communication with peers about consumption also did not increase as a result of family disruption such as divorce or family discord. This supports Noack, Krettek and Walper's (2001) study which suggested parental separation influences adolescents' peer relationships only to a small extent.

In regard to OTCs, a study in Spain found no association between family structure and use of OTCs (Morales-Suárez-Varela et al., 2009). In the absence of other studies relating family structure and OTCs consumption, it is wise to look at other legally available drugs such as alcohol and tobacco to get insight into adolescents' use of legal drugs. A study by Griesbach, Amos and Currie (2003) in seven European countries discovered that family

structure was significantly associated with smoking behaviour. Living as a stepfamily was associated with being a smoker in six countries; while, living in a single parent family was also associated with adolescent smoking in five of the seven countries. A study by Oman, Vesely, Tolma, and Aspy (2007), in the US, supported the European results. They found youth living in a one-parent household are more likely to report using alcohol and tobacco.

Religious-related issues have received very limited attention in consumer socialisation studies. A study in Malaysia by Kamaruddin and Mokhlis (2003) revealed that religious affiliations correlated with peer influence and school education. They found that Muslim adolescents were more likely to interact with peers regarding consumption matters and perceived school education as a source of consumer-related education. However, it is not the interest of this study to investigate religion itself but, instead, this study focuses on religiosity as one of the potential exploratory variables. Religiosity is defined by Worthington et al. (2003) as "the degree to which a person adheres to his or her religious values, beliefs, and practices and uses them in daily living" (p. 85), therefore a similar degree of religiosity can occur regardless of the specific religion one belongs to. Studies outside consumer socialisation areas have documented the association of religiosity and consumer behaviour. For example, Bahr and Hoffmann (2008) suggested that religious involvement may help buffer or lessen the power of peers in drug use.

There is a wealth of studies relating mass media and religiosity. While some have suggested that highly religious individuals preferred print media (Finnegan & Viswanath, 1988), a negative correlation was found with television consumption (Hamilton & Rubin, 1992). A recent study by Choi, Kale and Shin (2010) in Korea found that highly religious consumers were less likely to be dependent on mass media (internet, television, radio,

newspapers and magazines) to get product information. They suggest that such a result is because religious consumers do not trust media claims. Golan and Day (2010) also documented that both daily newspaper and network television news were not trusted by religious individuals. According to Golan and Day radio and news in magazines also have no relationship with religiosity while findings for the internet were mixed. For the same reason, religious consumers also are less likely to use salespeople as product information sources. Religious consumers also perceived higher levels of risk in their purchase decision (Delener, 1994). Thus, they look for quality products and are less likely to make impulsive purchase decisions (Mokhlis, 2006a).

As far as OTCs are concerned, Idehen and Kehinde (2010) documented that highly religious young adults are less likely to use unprescribed drugs. In a similar vein, they also found that the more religious a person was, the more likely they would avoid smoking. As above with regard to family structure, in the absence of other studies relating religiosity and OTC consumption, it is wise to look at other legally available drugs such as alcohol and tobacco to gain insights into adolescents' use of legal drugs. In this case, it is worth mentioning that Weaver, Flannelly and Strock (2005) have conducted a review of research on the effects of religion on adolescent tobacco use, published between 1990 to 2003. The authors found a highly consistent association between lower cigarette use and greater religious involvement across the 22-year study period.

2.2.1.2 Age/life-cycle position

Another antecedent in the socialisation process proposed in the Moschis and Churchill (1978) model is age or life-cycle position. In a later study, Churchill and Moschis (1979) found that the amount of television viewing and family communication about

consumption matters declined with age, but communication with peers about consumption matters increased with age. Older adolescents seek more sources of information about a specific product, read the newspaper and listen to radio more than their younger counterparts (Moore & Stephens, 1975). These may lead to greater consumer knowledge, a better ability to manage consumer finance (Moschis & Churchill, 1978) and a tendency to be less sceptical towards advertising (Moscardelli & Liston-Heyes, 2005). Although older adolescents tend to use more sources of consumer information before making a decision, they may use fewer criteria when evaluating a product, and prefer to buy products in the absence of parental supervision (Moschis & Moore, 1979).

With regard to OTCs, Sansgiry and Cady (1996) discovered that young adults mostly purchase them from grocery stores as compared to the elderly, who preferred to purchase from a pharmacy. In that study, they also found young adults also do not always seek advice from a pharmacist and may not read the label completely when purchasing these medicines. Further, Stephens and Johnson (2000) noted age differences in the sources of information used when purchasing OTCs cold/allergy medications. It was highlighted in that study that older adults tended to get advice from formal care providers and use product labels as major sources of information, while younger adults relied on family and friends. Because younger adults relied on information from informal sources that cannot offer a professional opinion, they may lack knowledge of OTCs. Stephens and Johnson (2000) also revealed that when reading information on a product label during an OTC purchase, younger adults may focus on price information. Older adults, in contrast, may focus on information regarding side effects and drug interactions (Stephens & Johnson, 2000)

2.2.2 Socialisation process

Moschis and Churchill (1978) theorised that the socialisation process incorporates both socialisation agents and the type of learning in operation. These authors highlight that socialisation agents communicate attitudes, norms, motivations, and behaviours to the learner.

In studies of consumer socialisation, the influence of socialisation agents is well recognised. Early researchers persistently argued there are three major socialisation agents; parents (Moore & Stephens, 1975; Moschis, 1985; Moschis & Churchill, 1978; Shim, 1996; Ward & Wackman, 1971), peers (Moschis, 1987; Moschis & Churchill, 1978; Moschis & Moore, 1979) and mass media (Bush et al., 1999; Churchill & Moschis, 1979; Mangleburg & Bristol, 1998; Ward & Wackman, 1971). Over the years, other socialisation agents such as schools, retailers, and recently, the internet, have received research attention as well (Grossbart, Hughes, Pryor, & Yost, 2002; Singh et al., 2003).

2.2.2.1 Family

Family is a powerful socialisation agent. Numerous researchers (Moore & Stephens, 1975; Moschis, 1985; Moschis & Churchill, 1978; Shim, 1996; Ward & Wackman, 1971) confirm the influence of family in the acquisition of consumer skills. For younger children, interaction between mother and child is known to be most important. For older children, the mother's own behaviour has a more important impact on the development of consumer skills (Ward, 1978). Almost all types of consumer behaviours are practised in the family context, providing children with the means to observe and imitate (Kuhlmann, 1983). Moschis (1985) suggests that parents can influence the development of consumer behaviour both directly and indirectly. Children acquire direct consumer learning through

several communication processes. These include overt interaction about consumption matters, purposive training, using reinforcement mechanisms (both positive and negative), and observation of the parents' consumer behaviour. Moschis also suggests that the family can indirectly affect consumer learning by influencing children to interact with other sources of consumer influence. For example, communication about consumption with parents is an important intervention variable between exposure to commercial information and the actual purchase (Ward & Wackman, 1971).

Communication with family may help adolescents in developing many types of consumer skills. Moore and Stephens (1975) noted that overt parent-child communication about consumption was a predictor of adolescents' price knowledge about selected products. The more they interact with parents, the more concern they have with high quality, price and value (Shim, 1996). As compared to their peers or the mass media, marketplace-related communication with parents was found to be the strongest influence in helping teens to learn about product label use (Mangleburg et al., 1997). Similarly, family seems to be important in teaching adolescents "rational" aspects of consumption (Moschis & Churchill, 1978). Parental communication about consumption-related activities also appears to influence attitudes towards advertising (Bush et al., 1999).

The effect of family influence on decision-making may differ depending on product type. Moschis (1987) found that speciality goods such as records, sporting goods, and CDs tended to be purchased in the absence of family members, while products such as clothing tended to be purchased jointly with family members. Supporting this finding, a recent study among early teenage girls in the UK stated that parents were the most influential compared to other agents in choosing clothing (Grant & Stephen, 2005). Parental advice

is also preferred over other sources of consumer information (TV advertisements, consumer reports and newspaper or magazine advertisements) in buying products such as wristwatches, dresses, shoes, pocket calculators, and hairdryers where price, social acceptance, and performance were of great concern (Moschis & Moore, 1979). Likewise, a study on green purchase behaviour revealed that parents play the most influential socialisation role as compared to other socialisation agents (Yan & Xu, 2010).

One popular way of examining parental influence on adolescents' consumer socialisation is the family communication pattern. This pattern of communication is based on two uncorrelated dimensions of communication structure labelled socio-orientation and concept-orientation. A socio-oriented family communication pattern focuses on maintaining harmonious family relationships by encouraging respect for authority and pleasant social relationships at home, while concept-oriented family communication focuses on teaching children to develop their own skills as consumers, thus allowing children to form their own opinions of the world around them (Moore & Moschis, 1981; Moschis, 1985).

Because concept-oriented family communication encourages children to develop independent views and self-expression, it may lead to sceptical attitudes towards advertising (Mangleburg & Bristol, 1998). Moschis (1985) suggests that teens raised in a family where socio-oriented family communication is used may make decisions based on the evaluation and opinion of others. Compared to children in socio-oriented families, children from concept-oriented families may have a greater influence in purchase decision-making (Foxman et al., 1989). This finding is supported by Kim, Lee and Tomiuk (2009). In that study Kim et al. (2009) also found that mothers who exercise the

concept-oriented communication pattern appear to promote a utilitarian and a social/conspicuous decision-making style in their children[5]. Socio-oriented mothers on the other hand promote an undesirable decision-making style, one that is impulsive, careless, and confused by too many choices (Kim et al., 2009).

These types of family communication patterns have also been studied outside the US. For example, Hsu and Chang (2006) linked family communication styles with young adults' lifestyles in Taiwan. In that study, family communication styles were categorised into four typologies; *laissez-faire* (low concept-oriented, low socio-oriented), protective (low concept-oriented, high socio-oriented), pluralistic (high concept-oriented, low socio-oriented) and consensual (high concept-oriented, high socio-oriented). They found young adults from protective and *laissez-faire* family communication-style environments were less sensitive to certain types of information that their counterparts from consensual and pluralistic orientations were enthusiastic about. Overall, it appears from previous studies that parents using different family communication patterns teach their children differently about consumer matters. As a consequence, children in families with different communication patterns demonstrate different consumption-related behaviour.

Researchers have also studied family communication patterns, based on family structure with mixed results. Single parents more often search for consensus, thereby encouraging their children to discuss many things (high concept-orientation) without allowing them to disturb the internal harmony and hierarchy in the family (high socio-orientation). In contrast, two parents often support each other allowing less input from children and expecting greater obedience. As rated by their adolescent children, single-mothers

[5] A utilitarian decision making style emphasises on finding the best quality or product benefits from price, while social/conspicuous focuses on on the social meanings or value-expressive function of consumption.

exercise a more concept-oriented parental style; parents tend to let their children develop consumer abilities through their own experience (Lachance et al., 2000). In contrast to Lachance et al.(2000), Geuens, Mast, and Pelsmacker (2002) discovered that single parents were higher on both socio- and concept-orientations of communication as compared to two parent families. However, children in families where one or both parents were frequently absent were most likely to engage in delinquent activities (Moschis, Cox, & Kellaris, 1987). Overall, no clear relationship seems to exist between family structure and family communication patterns.

With regard to OTCs, family members are among the primary purchasers of OTCs (Kim & King, 2009). Paddison and Olsen (2008) discovered painkiller usage invoked family traditions with a particular painkiller being chosen because it was used by the family during childhood. Familarity with a particular painkiller can lead to preference for the product (Zajonc, 1980). Adolescents in a study by Chambers et al. (1997) normally obtained their OTCs from parents as well as taking the medicines themselves from the home medicine cabinet, though some may also have acquired them from a peer, adult friend or store. They also found that the most common source of OTCs information was parents, followed by the package, physicians and/or a nurse. Very little information was obtained from siblings, adult friends, the media or teachers. Similarly, Westerlund et al. (2008) found that more than half of the students in their study reported that OTCs were chosen based on parents' recommendations, followed by other sources of recommendation, e.g. a physician, pharmacist or from advertising. Although these studies were not conducted from a consumer socialisation perspective, they showed the role of the family as an important agent in learning about the consumption of OTCs.

2.2.2.2 Peers

While some studies document parents as more important socialisation agents than peers (Grant & Stephen, 2005; Lachance & Legault, 2007; Mangleburg et al., 1997), other studies found the opposite (Kamaruddin & Mokhlis, 2003; Moschis, 1987; Olson, 1982). Generally, adolescents rely more on peers than on parents for information regarding products for which peer acceptance is an important consideration, such as sunglasses and wallets (Moschis & Moore, 1979). In the same study, it was also noted that the frequency of peer-adolescent interaction had a significant influence at the product evaluation stage. Interaction with peers about consumption matters increases adolescents' awareness of goods and services in the marketplace and also the buying process (Moschis & Churchill, 1978). In Malaysia, Sabri and Masud (2005) discovered that peers have much influence on product choice among adolescents. They purchase the products approved by their peers, in stores where their peers shop, and prefer the same brands as their peers (Sabri & Masud, 2005). They also often discuss a purchase with peers before buying the product, and watch what their peers buy (Neeley, 2005). Peer communication also has positive effects on the attitude to advertising (Bush et al., 1999). These studies suggest that peers are important agents in the adolescent's consumer socialisation (Moschis, 1987; Moschis & Churchill, 1978; Moschis & Moore, 1979).

To capture the influence of peers on adolescent consumer socialisation, a number of researchers used the concept of susceptibility to interpersonal influence, based on work carried out by Bearden, Netemeyer, and Teel (1989). Susceptibility to influence is defined as:

> The need to identify or enhance one's image with significant others through the acquisition and use of product and brands, the willingness to conform to the expectation of others regarding purchase decisions, and/or the tendency to learn about products and services by observing others and/or seeking information from others (Bearden et al., 1989, p. 474).

Susceptibility to influence is theorised to have two dimensions; normative and informational influence. Normative influence is defined as the tendency to conform to the expectation of others, while informational influence is the tendency to accept information from others as evidence about reality (Bearden et al., 1989). It was evident from previous studies that susceptibility to normative influence and susceptibility to informational peer influence have different effects on adolescents' learning (Mangleburg & Bristol, 1998; Mangleburg, Doney, & Bristol, 2004).

For example, Mangleburg and Bristol (1998) found that susceptibility to normative and informational peer influence had different effects on adolescents' scepticism towards advertising. Susceptibility to normative peer influence was found to reduce the tendency towards scepticism. In contrast, susceptibility to informational peer influence enhanced scepticism. A more recent study suggested that susceptibility to informational influence also appeared to have more impact on shopping attitudes and behaviours than normative influence, indicating that teenagers are more influenced by information that the group provides than by group pressure to conform (Mangleburg et al., 2004).

For both adults and for young consumers, peers also play an important role in the consumption of OTCs. Adult consumers obtain information about OTCs from peers

(Hughes, Whittlese, & Luscombe, 2002), their most important sources of information (Kim & King, 2009; Paddison & Olsen, 2008). In addition, peers give advice in selecting OTC medications (Yousef, Al-Bakri, Bustanji, & Wazaify, 2008). Peers are not only important in OTCs consumption among adults, but they also play an important role among adolescents, for example, in giving OTCs to other adolescents (Chambers et al., 1997).

2.2.2.3 Mass media

The role of the media as agents in the consumer socialisation process has received a great deal of attention from researchers, television in particular. Television has been found to indirectly stimulate interaction about consumption with parents (Churchill & Moschis, 1979). While in the long term, television viewing may lead to greater consumer knowledge, product knowledge and motivation for consumption for adolescents (Mehta & Keng, 1985), in the short term it may not affect the development of consumption-related motivation and behaviours (Moore & Moschis, 1978). Watching television commercials is a strong predictor of attitudes toward advertising (Bush et al., 1999) and seems to give teens the experience to judge the tactics used by advertisers (Mangleburg & Bristol, 1998), but does not appear to contribute to recall of the advertisement (Ward & Wackman, 1971). Other effects of television commercials include motivating the purchase of expensive, well-known brands, seeking excitement from novelties and fashion and shopping as a form of recreation and entertainment (Shim, 1996).

Besides television, the print media also play an important role in consumer socialisation. Newspaper readership provides the strongest predictor of several consumer skills such as consumer knowledge, consumer activism, economic motivation for consumption and the ability to manage finances (Shim, 1996). In Singapore, Mehta and Keng (1985) found that

newspapers had a major impact on adolescents' consumer affairs knowledge[6]. However, both print media and television commercials could also direct young people towards undesirable consumer decision making, such as impulsive purchases and confusion from too many brands and stores from which to choose (Kamaruddin & Mokhlis, 2003). The undesirable impact of media is also reported in Moore et al. (2002), where it is noted that reliance on advertising is associated with deficits in adolescents' factual knowledge of the consequences of sexual behaviour, weakening their attitudes towards sexual responsibility and increasing the likelihood that young teens might engage in sexual intercourse. This may be the result of adolescents being inundated with advertising that features sexual imagery. Other media such as radio have received little attention in the consumer socialisation literature. However, what has been done suggests that radio has no effect on consumers' affairs knowledge, product knowledge, or motivation for consumption (Mehta & Keng, 1985).

In addition to the traditional media, the internet has become an appealing and powerful communication tool, especially among adolescents. Teens use the internet to carry out research, do homework, find news and current events, for health education, entertainment, leisure, and shopping (Ferle, Edwards, & Lee, 2000). Young people also prefer to use the internet as the source of sensitive information, especially if they want it quickly, easily, and confidentially (Chan & Fang, 2007). Similarly, Paul and Bryant (2005) state that the internet serves as an invaluable resource for sensitive topics such as sexual and mental health, as well as issues relating to interpersonal relationships, which many adolescents

[6] Consumer affairs knowledge is defined as "cognitions held with respect to basic terms in economic, insurance, finance, real estate, and marketing knowledge of consumer legislation in the area of unit pricing, bait advertising, code dating, and remedies available to consumers" (Moschis & Churchill, 1978, p. 607). An example of a consumer affairs measure employed by Mehta and Keng (1985) is; "When a person dies, his property is taken over by the government".

may feel uncomfortable discussing with parents, health care providers or even peers. Thus, understanding the internet and its potential impact on consumer socialisation is a matter of contemporary interest (Lee & Conroy, 2005).

Studies show the internet is the most preferred socialisation agent as compared to other agents (Singh et al., 2003), and the effect of the internet on adolescents' lives and subsequently their consumer behaviour cannot be denied (Kaur & Medury, 2011; Moscardelli & Liston-Heyes, 2005). The use of social media websites such as Facebook, YouTube, Myspace and Twitter are also popular as sources of health information among adolescents (Varce, Howe & Dellavalle, 2009). The interactive nature of the internet, together with adolescents' comfort with the technology suggests that the internet may have more impact on the socialisation process than other media (Lee & Conroy, 2005). Both New Zealand and Malaysia have excellent internet structures and high levels of uptake into households (Marshall et al., 2006).

In the OTC context, consumers use various media such as magazines and television to obtain information (Hughes et al., 2002). Some consumers may even have made their choice of OTCs based solely on information provided by television advertising (John & Evans, 2000). Reliance on, and exposure to, OTC advertising may increase belief in the efficacy and lower risk of the medicines and encourage young viewers to approve of them without much thought (Atkins, 1978). For example, students in Burak and Damico's (2000) study used at least one advertised OTC without discussing their choice with a physician and instead depended on product advertising.

However, some consumers view advertising as insufficient, and therefore obtain information from more reliable sources such as doctors or pharmacists. For example, Chambers et al. (1997) found that very few respondents in their study reported obtaining information about OTCs from media such as television and magazines. Another study also found that advertising did not influence consumer choice in buying painkillers and only acted as a reinforcement of the likely decision rather than as an agent to change the actual choice (Paddison & Olsen, 2008). In terms of demographic profiles, brighter, higher status adolescents who are usually healthy and whose parents are less medicine-oriented tend to be more influenced by OTC advertisements (Atkins, 1978). Other media, such as patient information leaflets, may only be used occasionally, when, for example, a medicine is new or if the consumer experiences side effects (Hughes et al., 2002). The internet has also become an attractive option for gathering information and buying healthcare products, including OTCs. This is evident in dozens of sites describing the use of OTCs for both desirable and undesirable purposes (Gurau, 2005). Descriptions of how to experiment with OTCs are also available on these websites. As Bryner et al. (2006) highlighted, among the factors contributing to abuse of DXM was the availability of numerous websites promoting such abuse.

2.2.2.4 Other socialisation agents

Moschis (1987) suggests that besides parents, family, peers and mass media, other socialisation agents such as schools, retailers (salespeople) and church/religion might play an important role in consumer socialisation. He further suggests that children who spend their time preparing for, or attending, church instead of socialising with other consumer socialisation agents are likely to be affected less by these agents. However, studies in consumer socialisation have yet to examine the contribution of religion as a socialisation

process and instead, investigate religion as a social structural variable such as provided by Kamaruddin & Mokhlis (2003).

The role of retailers as agents in the consumer socialisation process has received only limited attention. Moschis (1987) noted that adolescents' reliance on salespeople as a source of information was greater than their use of mass media. He also documented that when compared to parents, the salesperson is second in influence and more important than peers. In the study of OTCs, the role of pharmacists, doctors, nurses and salespeople as agents cannot be denied (Emmerton & Shaw, 2002; Hashim et al., 2007; Yousef et al., 2008). For example, in New Zealand the involvement of pharmacy staff is influential when consumers do not have a particular brand in mind during purchase or when they are making a first time purchase (Emmerton & Shaw, 2002). In Malaysia, it is evident in a study by Hashim et al. (2007) that a doctor was preferred, followed by a pharmacist, nurse and salespeople at Chinese medicine shops for advice about OTC medications.

Studies of the role of school as an agent in consumer socialisation are also scarce in the literature. The results of the limited number of these, however, suggest that school is of little importance. For example, early studies documented that school contributes very little to the development of the four consumer skills of brand knowledge, price accuracy, legal knowledge and consumer role conceptions (Moschis & Moore, 1978). Similarly, formal education did not contribute much to consumer affairs knowledge, consumer activism or finance management (Moschis & Churchill, 1978). With reference to consumer decision-making, increased consumer education at school may often result in shaping the "price equals quality" type of consumer, decreasing both brand consciousness and possible confusion created by having too many choices of products, brands,

information, and stores (Shim, 1996). Kamaruddin and Mokhlis's (2003) similar study in Malaysia found that schools contributed little to the acquisition of desirable decision making styles with regard to price and quality consciousness. In contrast, recent studies have documented the importance of school as socialisation agents. Lachance and Legault (2007) found school helped develop more prudent consumer behaviour. Yan and Xu (2010) found school was the second most important socialisation agent in predicting green purchase behaviour. Though a number of studies on OTCs have been conducted, school education about OTCs is not widely measured. One study by Chambers et al. (1997) found teachers contribute very little information regarding OTC medications.

2.2.3 Consumer socialisation outcomes

The last element in Moschis and Churchill (1978) consumer socialisation framework is outcomes. "Outcomes" refers to the consequences of learning; both cognitions and behaviours that consumers develop through the process of socialisation and it consists of skills, knowledge, and attitudes. Consumer socialisation outcomes can be the direct effects of antecedents or the socialisation process; the indirect effects of antecedents through the socialisation process, and a combination of both. Previous researchers have studied consumer socialisation outcomes on a wide variety of topics, including consumer decision-making styles (Kamaruddin & Mokhlis, 2003; Moschis & Moore, 1979; Shim, 1996), attitudes toward advertising (Bush et al., 1999; Moore & Stephens, 1975), brand knowledge and attitudes (Hsieh, Chiu, & Lin, 2006; Moore & Stephens, 1975), price accuracy (Moore & Stephen, 1975), legal knowledge (Moschis & Moore, 1978), use of product labels (Mangleburg et al., 1997), product knowledge (Mehta & Keng, 1985; Moore & Stephen, 1975), shopping with friends (Mangleburg et al., 2004), reactions to direct-to-consumer prescription drug advertising (Lee, Salmon, & Paek, 2007), purchase

of clothing (Grant & Stephen, 2005; Hsu & Chang, 2006), compulsive consumption (Benmoyal-Bouzaglo & Moschis, 2009), materialism (Nguyen et al., 2009), family purchase (Ahuja et al., 1998; Kaur & Medury, 2011; Lachance et al., 2000), product placement (de Gregorio & Sung, 2010), consumer competency (Lachance & Legault, 2007), and green purchase behaviour (Yan & Xu, 2010).

As these previous studies suggest, this theory appears to offer high exploratory power in studying the phenomena of adolescents' development as consumers and provides great academic insight into consumer behaviour. Outside consumer behaviour, as highlighted in Section 2.2, this theory has also been used to study other issues such as sexual knowledge (Moore et al., 2002) and leisure-time activities (Arnon et al., 2008). Applying the theory of consumer socialisation to OTCs, three learning outcomes are identified for this study; knowledge about OTCs, attitudes towards OTCs and behaviours, which include label reading and consumption.

In essence, in the area of consumer socialisation, previous studies relating to knowledge have included brand knowledge (Hsieh et al., 2006; Moore & Stephens, 1975), legal knowledge (Moschis & Moore, 1978), product knowledge (Mehta & Keng, 1985; Moore & Stephen, 1975) and sexual knowledge (Moore et al., 2002). In the OTCs area, studies relating to adolescents' OTCs knowledge documented poor knowledge about the product (Huott & Storrow, 1997; Myers et al., 1992; Wilson et al., 2010). Studies of attitudes in consumer socialisation were mostly focused on attitudes towards advertising and brands (Bush et al., 1999; Hsieh et al., 2006; Moore & Stephen, 1975). Consumers tend to view OTCs as less harmful apparently because these medicines are easily acquired without a doctor's prescription (Clark, Layton, & Shakir, 2001) and usually would not have serious

side effects (Wazaify et al., 2005). This attitude is typical not only of adults, but also of adolescents (Wilson et al., 2010). Arguably, a relaxed attitude can lead to potential risk. In regard to behaviours, most of the studies in consumer socialisation looked at desirable consumer behaviour (Yan & Xu, 2010). Few studies have investigated undesirable consumer behaviour such as compulsive consumption (Benmoyal-Bouzaglo & Moschis, 2009) and materialism (Nguyen et al., 2009). In a round table discussion on expanding the boundaries of consumer socialisation research, there was a call for researchers to examine the potentially negative consequences of the socialisation process (Bristol & Mangleburg, 2005).

In response to this call, the present study investigates both positive (proper OTCs usage) and negative (improper OTCs usage) behaviours. Such understanding is important, considering that adolescence is seen as a relatively unpredictable time of life where young people explore their identity and may choose to engage in various risk-taking activities (Arnett, 2001). Numerous studies have acknowledged the increase in risk taking behaviours. Adolescents often engage in risky behaviours such as sexual activity (Moore et al., 2002; Schroder, 2003) drinking, reckless driving and drug use (Finken, Jacobs, & Laguna, 1998; Michael et al., 2008; Pillay, 2004; Sarkar & Andreas, 2004), as well as confronting health issues such as eating disorders like bulimia and anorexia (Abrantes, Strong, Ramsey, Lewinsohn, & Brown, 2006; Bas & Kiziltan, 2007; Slee, 2002). In Malaysia, Abdullah Yusof and Mohd Amin (1999) reported that problems such as drug addiction, juvenile delinquency and unhealthy lifestyles were on the rise. In the period, 1980-1995, criminal cases involving juveniles increased by 62 percent. Further, the Institute of Public Health (2008) reported that the phenomenon of premarital sexual activity has been increasing over the years. A more recent study by Sirirassamee,

Sirirassamee, Borland, Omar and Driezen (2011) revealed that 5% of Malaysian adolescents aged 13 to 18 years of age were current smokers, while another 8.1% were beginners. It was also reported in their study that these adolescents began smoking at the age of 13.9 years. In New Zealand, a study by researchers at Auckland University discovered that 17.9% of adolescents aged 15 to 18 years reported drink-driving (Tin et al., 2008). Other researchers in New Zealand have reported adolescent pregnancy (Cray, 2002), gambling (Bowler, 2003), and alcohol abuse (Johnstone, 2000). Adolescents are less competent in making decisions in that they do not consider the long term implications of their decisions and behaviour (Schroder, 2003). In the OTCs context, researchers have also documented risky behaviours, abuse, and misuse[7] of OTCs (Bryner et al., 2006; Ellen et al., 1998; Feinberg, 2006; French & James, 2008).

2.2.4 Cross-cultural studies in Consumer Socialisation

A number of studies have examined consumer socialisation across different cultures. Most of these studies (with the exception of Singh et al., 2003) have been conducted using young children and have focused on parental styles. Though the socialisation of adolescents and children might be different, such studies can give some insights to consumer socialisation across cultures. It is worth noting that most previous studies in consumer socialisation were conducted in industrialised nations, especially the US and Japan. Table 2-2 provides a summary of these studies.

[7] Misuse is using an OTC product for a legitimate medical reason but in higher dosage or for a longer period than recommended, e.g. taking more of a painkiller than recommended to treat a headache, while abuse is the non-medical use of OTCs, e.g. to experience a high or lose weight in a manner not medically warranted (Wazaify et al., 2005).

Table 2-2: Cross-cultural studies in Consumer Socialisation

Study	Findings	Countries
Ward, Klees, and Robertson (1987)	Differences are found between cultures in the amount of television watched, the amount of co-viewing with parents and in the amount of attention paid to television advertising. Families in the collectivist society (Japan) are seen to be more circumspect with children, who are expected to learn through observation and trial and error. In contrast, families in the individualistic societies are seen as more open and expressive. Children are expected to learn about consumption through purposive and expressive parental behaviour.	US, Japan and Britain
McNeal, Viswanathan, and Yeh (1993)	Findings are compared to those gained from studying children in the United States. Children in Hong Kong, New Zealand, and Taiwan show maturity in independent purchasing at least as early as American children. Their frequency of purchase visits increases with age and income. However, children from Hong Kong, Taiwan and New Zealand differ a little from their US counterparts when it comes to spending money. The major difference is that almost none of the children in Hong Kong, New Zealand and Taiwan buy clothes with their own money, as compared to children in the US. In contrast, children in the US usually do not buy school-related items with their own money, as do children from the three other countries.	Hong Kong, New Zealand, and Taiwan
Rose, Bush, and Kahle (1998)	Consistent with collectivist societies, Japanese mothers may be more socio-oriented, while consistent with individualistic societies, American mothers might be more concept-oriented. These mothers may hold more negative attitudes towards advertising and maintain close control over what their children watch while, in contrast, Japanese mothers may have more optimistic views of advertising and place fewer controls over their children's viewing habits.	US and Japan
Rose (1999)	Consistent with a collectivist society, mothers in Japan expect their children to develop consumer-related skills and understanding about advertising practices relatively late. They restrict children's consumption, allow less consumption autonomy and foster more dependence on parents. In contrast, mothers in the United States, an individualistic society, encourage and expect the development of independent consumption relatively early, have high levels of communication about consumption and allow their children more consumption autonomy.	US and Japan
Rose, Boush, and Shoham (2002).	In both nations, concept-oriented communication increases children's influence over purchasing power, decreases consumption dependence, and is associated with high levels of children's income. Socio-oriented communication is related to an increased consumption dependence on parents in both nations but decreases children's influence only in an individualistic nation.	US and Japan
Rose, Dalakas, Kropp, and Kamineni (2002)	Australia represents a highly individualistic nation, Greece provides a collectivist European nation, while India is an Asian collectivist nation. It is noted that two parental styles; Strict-Dependent and Indulgent-Dependent occur almost exclusively in India and Greece, the collectivist nations. These two parental styles exhibit higher levels of fostering dependence.	Australia, Greece, and India

Rose, Dalakas, and Kropp (2002)	Greece, India and Japan represented collectivist nations while the United States and Australia represented individualistic nations. The results show that cultural differences in individualism versus collectivism, cannot completely explain cross-national differences in consumer socialisation. However, overall, American parents expect their children to learn about specific competencies as consumers earlier than other less individualistic nations. Australian parents hold earlier expectations of consumer-related skills than Indian parents, but no significant differences are found between Australian and Japanese or Greek parents.	Greece, India, Japan, US and Australia
Singh et al. (2003)	Explores consumer socialisation influences on young adults in different ethnic groups in the United States. Asian-Americans are significantly more susceptible to normative and informative peer influences as compared to Hispanics and African-Americans.	US

It is also worth noting that most of these studies compare the nations using the Hoftede (1980) framework of national culture. In terms of this framework, Malaysia is regarded as a collectivist culture while New Zealand is characterised as an individualistic society. In an individualistic culture such as New Zealand's, everyone has a right to their opinion. Based on this, adolescents in this culture are expected to be more vocal in expressing their opinions and insisting on their rights. Chan and McNeal (2003) found that in an individualistic society, parents will treat their children as individuals and are willing to involve them in family purchase decisions. Children are expected and encouraged to develop opinions of their own.

Another distinct feature is the power distance dimension, where the New Zealand score is low. Malaysia, on the other hand scores highly in power distance. Children in high power distance societies are expected to show obedience to their parents and not express conflicting ideas openly. Parents have great authority and children are not seen as competent until a later age. Thus, adolescents in Malaysia are expected to view their parents as benevolent decision makers (Hoecklin, 1995). Children in low power distance societies are socialised to be more independent. They are treated as equals as soon as they

are able to act independently and may be allowed to contradict their parents. Two-way communication is encouraged and children are expected to be competent at a young age.

2.3 Chapter summary

This chapter discusses the literature on consumer socialisation which provides the conceptual framework of this thesis. Many scholars have investigated the various linkages between the variables based on Moschis' (1978) consumer socialisation model, yet much is still unexplored. In the case of socialisation agents, the three most studied have been family, peers, and the mass media. The internet has also emerged as an important socialisation agent. Studies of other agents such as schools, churches and retailers are very scarce. Due to this scarcity, and considering the importance of these agents in educating adolescents about OTCs, they were included as variables in this thesis and will be discussed further in the next chapter. A series of studies in cross cultural consumer socialisation were briefly discussed. It was noted that respondents for almost all of these earlier studies were young children and that the studies were conducted in the US and Japan, indicating the importance of conducting the current study in other contexts such as in New Zealand and Malaysia.

This chapter also discussed the literature focusing on OTCs. It is evident from previous studies that the use of OTCs among adolescents is common for various reasons. The most common OTC medications used among adolescents are the analgesics classes of drug. Despite the frequent usage, adolescents tend to have poor knowledge of the products which is a great concern. Some young consumers use them wisely, some misuse them whether purposely or unintentionally, and some abuse these medicines.

Chapter 3
Conceptual Framework and Hypotheses

The conceptual framework developed for this study is based on the work of Moschis and Churchill (1978), modified and extended following consideration of the literature presented above. Presented below in Figure 3-1, the framework reflects the studies on adolescents, consumer socialisation and OTCs.

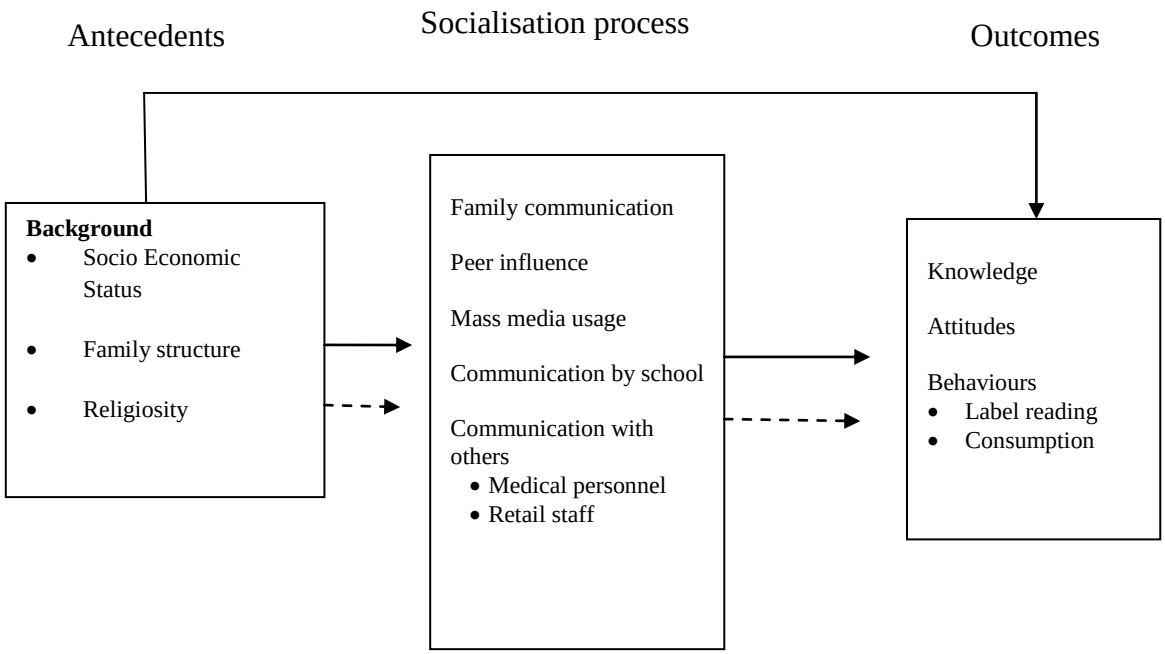

Figure 3-1: Adolescents' consumer socialisation of over-the-counter medicines model

Consistent with Moschis and Churchill (1978), the model is divided into three main elements; antecedents, the socialisation process, and outcomes. Adolescents' backgrounds, which include socioeconomic status, family structure and religiosity, serve as antecedents to consumer socialisation of OTCs. These antecedents are expected to influence socialisation outcomes of OTCs directly or indirectly through the socialisation

process. Based on the literature, socialisation processes proposed in this model are interactions with family, peers, mass media and school, as well as other purchase-relevant individuals who may influence the consumption of OTCs, such as doctors, pharmacists, nurses and salespeople.

Preliminary analysis suggested that school, which was initially considered as a result of the literature review, was not a significant socialisation agent with this product class. Further testing of the impact of this variable was not warranted. A simple look at frequencies documented that schools, at least for the students in this sample, do not educate students on OTCs to a degree perceived as meaningful by the respondents. Only 14 respondents or 5.1% in New Zealand, 19 respondents or 8.2% in Malaysia reported that schools provided much information about OTCs. Examining the role of school as a socialisation factor becomes a moot point and therefore was removed from hypothesis testing.

Interaction with family is captured using socio-oriented and concept-oriented family communication patterns while the influence of peers is captured using normative and informational peer influence measures. Four types of mass media channels were proposed; television, radio, printed media and the internet. Other purchase-relevant individuals are grouped into medical personnel (doctors, pharmacists and nurses) and retail staff.

This thesis examines three outcomes from consumer socialisation of OTCs; perceived knowledge, attitudes and behaviours. Behaviours are split into label reading and making recommendations regarding the proper and improper use of OTCs.

In short this thesis will empirically test the links between the different constructs exhibited in Figure 3-1. The following section will discuss consumer socialisation and its relation to each of the model constructs, provide a brief review of research findings and highlight the potential of adding the variables presented in the research model as predictors of adolescents' consumer socialisation of OTCs.

3.1 The effect of the adolescent's background on the consumer socialisation process for OTCs

The social environment in which an adolescent lives is important in their socialisation, given that they interact with their environment on a daily basis (Page & Ridgway, 2001). Adolescent background in this study includes socioeconomic status, family structure and religiosity. These variables have been widely examined in the literature concerned with adolescents' risky behaviours such as smoking, drinking and substance use, but have not been investigated in the OTCs' contexts. It is the aim of this study's first objective to examine the degree to which an adolescent's socioeconomic, family or religious background may influence how he or she learns to be a consumer of over-the-counter pharmaceuticals through socialisation with the agents identified earlier.

3.1.1 Adolescent's background and family communication pattern

While Churchill and Moschis (1979) found socioeconomic status has an insignificant impact on family communication, Gerris et al. (1997) found the higher the educational and occupational levels, the more parents enhanced child autonomy and the less they demanded that their child conform, representing a concept-oriented type of

communication. In other words, it can be assumed that those of high socioeconomic status exercise a concept-oriented type of family communication. As far as family structure is concerned, Lachance et al.(2000) and Geuens et al.(2002) have explored the effect of family structure and family members' interaction with socialisation agents. Lachance et al. (2000) compared single parent families to two parent families and found that single parent families more frequently exercise a concept-orientated type of family communication. Yet, a Geuens et al. (2002) study found that single parent families are high in both socio- and concept-orientations.

Little has been done to investigate the impact of religion or religiosity on the consumer socialisation processs. Moschis (1987) proposes that people who spend their time preparing for or attending church instead of socialising with friends or watching television are less likely to be influenced by these common socialisation agents. In Malaysia, Kamaruddin and Mokhlis (2003) found that religious group affiliations did not correlate with socialisation by parents. Within the OTCs context, no studies were found that related socioeconomic status, family structure or religiosity with family communication patterns for this class of product.

The literature however, suggests that family is important in learning about OTCs consumption (Chambers et al., 1997; Kim & King, 2009). OTCs usage and purchase also seem to vary with socioeconomic factors (Gore et al., 1994; Hussain, 1999) and religiosity (Idehen & Kehinde, 2010), but not with family structure (Morales-Suárez-Varela et al., 2009). These limited and mixed findings suggest that socioeconomic status, family structure and religiosity do influence socialisation within the family to a certain extent, but no clear relationship or direction seems to exist. Therefore, it is hypothesised that:

H1a: An adolescent's family socioeconomic status, family structure and level of religiosity will be associated with family communication patterns.

3.1.2 Adolescent's background and peer influence

Although peer influence has been widely studied in consumer socialisation (Bush et al., 1999; Moschis, 1987; Sabri & Masud, 2005), very few studies have investigated the effect of socioeconomic status on socialisation with peers. However, one such study (Moschis & Moore, 1978) documents that socioeconomic status is related to differences in how adolescents interact with peers; those in higher social class categories interact with their peers more frequently than their counterparts. With regard to family structure, Dawn (1982) discovered that children from both nuclear and single parent families were identical in their openness to peer influence. A similar finding was offered by Noack, Krettek and Walper (2001).

In terms of religion and religiosity, Kamaruddin and Mokhlis (2003) found that religious group affiliation correlated with the influence of peers regarding consumption matters. Bahr and Hoffmann (2008) suggested religious involvement may help buffer or lessen the power of peers who may encourage drug use. Peers who believe and practise the same religion were also more trusted by highly religious consumers searching for product information (Choi et al., 2010). As noted earlier, to capture the importance of peers in socialisation, this study used the concept of normative and informational influence. While studies about normative and informational peer influences have focused on understanding their effect on consumer socialisation outcomes (Mangleburg & Bristol, 1998; Mangleburg et al., 2004), no study has examined the effect of socioecomonic status,

family structure and religiosity on normative and informational peer influences, indicating it is worth investigating this effect. Based on the studies discussed above, it seems that one's background does influence socialisation with peers but it is hard to conclude there is a direction to the association. Therefore, it is anticipated that;

H1b: An adolescent's socio-economic status, family structure, and level of religiosity will be associated with i) normative peer influence and ii) informational peer influence.

3.1.3 Adolescent's background and mass media usage

In both New Zealand and Malaysia, OTCs are promoted through mass media (Malaysian Medical Association, 2002; Norris et al., 2005). A review of the literature provides evidence that socioeconomic status affects socialisation via mass media. Specifically, Shim (1996) found that socioeconomic status serves as a predictor of receptiveness to television commercials and reading print media, while Moschis (1987) found that adolescents with high socioeconomic status more frequently read both advertisements and news items in newspapers for information about consumption. In the OTCs' field, Atkins (1978) found that higher status adolescents who were usually healthy and had less medicine-oriented parents, tended to be more influenced by OTCs' advertisements.

The effect of family structure on media use was studied by Brown, Childers, Bauman and Koch (1990). They found that adolescents in father-absent homes used radio and television more than other adolescents. They also suggested that, in families where the father or mother is absent, children turned to other sources of information through which they could learn about the values and priorities of society. With regard to religiosity, Choi

et al. (2010) found that highly religious consumers were less likely to be dependent on mass media (internet, television, radio, newspapers and magazines) to obtain product information. They suggested that such a result is because religious consumers do not trust claims presented by media. This finding supports earlier research by Delener (1994). This present study therefore proposes that:

H1c: An adolescent's family socioeconomic status, family structure and level of religiosity will be associated with mass media usage.

3.1.4 Adolescent's background and communication with medical personnel and retail staff

In terms of socioeconomic status, consumers in low socioeconomic status groups were more likely to ask for information about medicines from a pharmacist (Cuzzolin & Benoni, 2010) and search extensively for information (Gore et al., 1994). There is a lack of evidence about relationships between family structure and communication with either healthcare professionals or salespeople. However, Moschis (1987) suggests that family disruptions will increase adolescents' attraction to non-familial influences. Highly religious consumers are less likely to use salespeople as information sources because they do not place much trust in them (Choi et al., 2010), but they might trust medical personnel because these individuals can give professional opinions. Though minimal in extent, these findings suggest the effect of socioeconomic status, family structure and religiosity on communication with medical personnel and retail staff. Thus, it is proposed:

H1d: An adolescent's family socioeconomic status, family structure, and level of religiosity will be associated with communication with i) medical personnel, and ii) retail staff.

3.2 The effect of adolescent's background on OTCs consumer socialisation outcomes

Objective two of this study is to examine the degree to which an adolescent's socioeconomic, family, or religious background may influence consumption-relevant outcomes of knowledge, attitudes, and behaviours towards over-the-counter medicines. This objective is achieved by testing the following hypotheses.

3.2.1 Adolescent's background and level of OTCs knowledge

Previous consumer socialisation studies addressing the association between socioeconomic status and knowledge have been focused on knowledge about brands (Moschis, 1987; Moschis & Moore, 1979). In general, these studies have found that adolescents with high socioeconomic status have greater knowledge as compared to their counterparts. In contrast, a more recent study found that adolescents with high socioeconomic status do not have greater knowledge but different knowledge that reflects the environments in which they are socialised. In that study, Page and Ridgway (2001) found that these adolescents have great knowledge about expensive brands, while adolescents in low socioeconomic status have great knowledge about store brands.

The few studies found regarding the relationship between family structure and knowledge suggest that adolescents in single parent households participate more in consumer decision

making tasks and shop for their family more often (Lachance et al., 2000; Tinson, Nancarrow, & Brace, 2008) implying they should have more knowledge as consumers. As far as religiosity is concerned, Mokhlis (2006b) found that highly religious individuals were more likely than less religious individuals to search for more market information. They perceived higher risks, felt less secure, and had less self confidence than less religious individuals and thus were more likely to be worried about potential risks associated with a product (Delener, 1990). It is therefore expected that they will make an effort to obtain information in order to increase their knowledge. Though mixed, these findings suggest that;

H2a: An adolescent's socioeconomic level, family structure, and level of religiosity will be associated with their level of OTCs knowledge.

3.2.2 Adolescent's background and attitude towards OTCs

Past research suggests that OTCs' usage was more common among those with high socioeconomic status (Hussain, 1999). However, this consumer segment did not extensively search for information when purchasing OTCs (Gore et al., 1994). Cuzzolin and Benoni (2010) support this finding. They found that a trend to ask for information about OTCs was mostly observed in consumers with low educational levels (often used as a proxy of low socioeconomic status). This suggests a highly confident attitude in the OTCs' purchase decision among high socioeconomic consumers. High socioeconomic consumers may feel they are educated enough to understand OTCs (Lokker et al., 2009) and such an attitude might boost their confidence.

Adolescents in non-intact families experienced less attention, emotional support and guidance (Roberts, Gwin, & Martinez, 2004). This disadvantage may result in less confident attitudes. However, when there is no one else involved in a purchase decision (Tinson et al., 2008), they may take on more decision making tasks regarding the family (Lachance, 2000) and shop for the family more often (Ahuja et al., 1998). Such experiences may make them feel more competent as consumers and may then lead to a more confident attitude. Thus, it is expected that family structure will be related to attitudes toward OTCs, but with the direction of the relationship hard to predict. Previous studies suggest that religious individuals have less confident attitudes. They do not trust claims by media and salespeople (Choi et al., 2010) and they tend to perceive higher levels of risk in their purchase decisions. Therefore, it is expected they might have less confident attitudes towards OTCs as these medicines are not prescribed by doctors. Supporting this, Idehen and Kehinde (2010) documented that highly religious young adults are less likely to use unprescribed drugs. Based on these mixed findings, it is proposed that:

H2b: An adolescent's socioeconomic level, family structure, and level of religiosity will be associated with attitude towards OTCs.

3.2.3 Adolescent's background and behaviours related to OTCs

Mangleburg et al. (1997) highlighted that using a product label is an important skill that adolescents should acquire, but that some adolescent segments read the label more than others. While it is important that consumers read the information on the OTC's label for guidance on the proper use of the medicines, Kim and King (2009) found some consumers read the OTC package label in the same way as they do for many other consumer products. Because OTCs can be purchased without prescription, these consumers consider

OTCs to be just like other consumer products. Gore et al. (1994), and Cuzzolin and Benoni (2010) found that consumers in low socioeconomic status search for information about OTCs when purchasing OTCs, which means they will be more likely to read the label carefully. However, another study revealed that people with low educational levels do not read the leaflet that comes with the container (Albarrán & Zapata, 2008), and that the label was more likely to be read by affluent and educated people (Mueller, 1991). Adolescents in non-intact families may turn to other sources of information (Brown et al., 1990) which suggests they may read the label, but how carefully they attend to the label is unknown. The fact that highly religious individuals were more likely to search for more market information (Mokhlis, 2006b) and perceived higher risks (Delener, 1990) suggests they would read the label carefully.

Lower educational levels (in some cases used as proxy for socioeconomic status) were associated with a higher likelihood of endorsing inappropriate use of OTC products, apparently as a result of the inability to understand the instructions (Lokker et al., 2009). Because there are a limited number of studies conducted on understanding the effect of socioeconomic status, family structure and religiosity on OTCs' consumption, related studies on other legally available drugs or risky behaviours were consulted to gain insights into proper or improper use. Studies on risky behaviours have documented that adolescents in low income families were more likely to be smokers (Soteriades & DiFranza, 2003). A study in Malaysia confirmed that gangsterism among teenagers is more likely to be characteristics of those from lower socioeconomic levels of the society (Alagappar, Len, George, Lee, & Wong, 2009).

Though not often studied, family structure was found not to be associated with the use of OTCs (Morales-Suárez-Varela et al., 2009). Studies on other risky behaviours such as smoking (Griesbach et al., 2003) and alcohol and tobacco use (Oman et al., 2007), however have documented significant positive associations with family structure. As far as religiosity is concerned, a 22 year study by Weaver, Flannelly and Strock (2005) found consistent association between low cigarette use and greater religious involvement. Similar findings were documented for alcohol use (Chen, Dormitzer, Bejarano, & Anthony, 2004; Sinha, Cnaan, & Gelles, 2007). Therefore it is hypothesised that:

H2c: An adolescent's socioeconomic level, family structure, and level of religiosity will be associated with a) OTC label reading, and b) recommending proper consumption of OTCs.

3.3 The effect of the consumer socialisation process

3.3.1 The consumer socialisation process and knowledge about OTCs

In one study, the level of parent-child communication about consumption has fairly well predicted a child's knowledge of selected products (Moore & Stephen, 1975). Children with different family communication styles (socio-oriented vs. concept-oriented) are expected to demonstrate different levels of knowledge (Moschis, 1985). This is logical, as children in families with socio-oriented communication patterns are encouraged to respect authority. They therefore tend to be more obedient and may make decisions based on the evaluations and opinions of others in the family (Moschis, 1985). In contrast, children with concept-oriented family communication patterns are encouraged to discuss many things and therefore may form their own opinions about the world around them

(Moore & Moschis, 1981). They may therefore have better knowledge about things around them.

Communication with peer groups is one of the most important sources of adolescents' market knowledge, as it makes adolescents aware of the goods and services in the marketplace and the buying process (Moschis & Churchill, 1978). To capture peer influence, this study used adolescents' susceptibility to normative and informational peer influence. Mangleburg and Bristol (1998) have investigated the relationship between informational peer influence and marketplace knowledge and found they were significant. In that study they did not investigate the relationship with normative peer influence. However, group relations are important for young people and the motivation to comply with and be accepted by the group is important (Hayta, 2008). It may encourage young people to learn more about products (Mangleburg et al., 2004) that their peers use and thereby increase their knowledge. Thus, it is expected that normative peer influence will affect knowledge.

The marketing of OTCs is a multi-billion dollar business. Marketers use many different communication methods such as face-to-face selling, free samples, direct mail, and advertising to reach their customers (Kavanoor, Grewal, & Blodgett, 1997). As a result, consumers are exposed to OTCs in different kinds of media. In both New Zealand and Malaysia, over-the-counter medicines are promoted through television, radio and print advertisements (Malaysian Medical Association, 2002; Norris et al., 2005). The contribution of the media to knowledge has been documented by Mehta and Keng (1985) and Shim (1996). Previous research has documented four possible agents to whom consumers might refer to in the consumption of OTCs; doctors, nurses, pharmacists

(medical personnel) and retail staff (Emmerton & Shaw, 2002; Yousef et al., 2008). It is reasonable to assume that when a young person has consulted with these individuals, they have learned something about the products they are considering, which demonstrates greater knowledge about them.

Based on the above, it is hypothesised that:

H3a: An adolescent's family communication style, level of normative peer influence, level of informational peer influence, mass media usage, and history of communicating with a) medical personnel, and b) retail staff will be associated with perceived knowledge about OTCs.

3.3.2 The consumer socialisation process and attitudes about OTCs

Attitude is an important concept marketers use to understand consumers (Peter & Olson, 1999). It is the way we think, feel about, and act towards some aspect of our environment, such as products (Quester et al., 2007). When compared to prescription medicines, consumers may think that OTCs are less harmful because these medicines are easily acquired without a doctor's prescription (Clark et al., 2001) and are both relatively inexpensive and often advertised in popular media. It is therefore interesting to investigate whether the processes of consumer socialisation can serve as a predictor of young consumers' attitudes towards OTCs.

Due to the nature of the concept-oriented family communication pattern, it is expected this will be positively associated with confident attitudes, while the socio-oriented family communication pattern may be more likely to have a negative association.

The information that peers provide (informational peer influence) is expected to be positively associated with a confident attitude. Peers may provide information that may help adolescents feel confident about the product. Similarly, the normative aspect of influence may also lead to confident attitudes. The tendency to enhance their image with significant others may make young people show they have confident attitudes. While it is expected that mass media will be associated with confident attitudes, the direction of this relationship is hard to predict. While some studies have found that information from the media is reliable and sufficient (Atkins, 1978; John & Evans, 2000), some have not (Chambers et al, 1997; Paddison & Olsen, 2008). It is expected that adolescents who have communicated with medical personnel and retail staff will have more confidence towards the OTC product (Hashim et al., 2007). The information they obtain from these socialisation agents will possibly help them feel more competent and hence confident. To explore this relationship, it is proposed that:

H3b: An adolescent's family communication style, level of normative peer influence, level of informational peer influence, mass media usage, and history of communicating with a) medical personnel, and b) retail staffs will be associated with a confident attitude towards OTCs.

3.3.3 The consumer socialisation process and behaviours

The fact that labels communicate essential information about product use, ingredients, and risk, means that reading the label is an important skill to ensure consumers' health, safety and well-being (Mangleburg et al., 1997). Findings of studies regarding the role that socialisation agents play in the use of product labels are mixed. Mangleburg et al. (1997)

found that marketplace-related communication from parents and peers increases teens' tendencies to use the product label, but concluded that marketplace-related communication from mass media, via television, did not affect their usage.

Moschis (1987) suggested that children in families with different communication styles are expected to demonstrate different behaviours, which was confirmed by other researchers such as Kim et al. (2009) and Hsu and Chang (2006). Studies regarding consumer socialisation with peers have documented that peer influence can result in both desirable (Moschis & Churchill, 1978; Yan & Xu, 2010) and undesirable behaviours (Benmoyal-Bouzaglo & Moschis, 2009; Moore et al., 2002). Similarly mass media influence can also lead to both desirable (Mehta & Keng, 1985) and undesirable behaviour (Kamaruddin & Mokhlis, 2003; Moore et al., 2002). Previous studies have also established that it is important that consumers get advice from agents perceived as knowledgeable about OTCs, such as doctors, nurses, pharmacists and salespeople, prior to their purchase (Emmerton & Shaw, 2002; Wazaify et al., 2005; Yousef et al., 2008). Consultations with these individuals are expected to lead consumers to use the product properly. Based on the above, it is anticipated that:

H3c: An adolescent's family communication style, level of normative peer influence, level of informational peer influence, mass media usage, and history of communicating with a) medical personnel, and b) retail staff will be associated with a) label reading, and b) recommending OTCs consumption

3.4 Comparing the consumer socialisation of adolescents living in Malaysia and New Zealand with respect to over-the-counter medicines

Individuals from different cultural backgrounds are exposed to different environments which will cause significant variations in behaviours, attitudes and beliefs. Malaysia and New Zealand are totally different in culture, backgrounds and religions. Based on Hofstede's dimensions of culture (1980), Malaysia and New Zealand are very distinct in two dimensions; individualism/collectivism and power distance. These differences suggest that adolescents' consumer socialisation may be different in New Zealand and Malaysia. For example, a high power distance country such as Malaysia might be different with respect to this class of drugs because of a greater respect for, or acceptance of authority, thus adolescents socialise in a different manner than in low power distance country such as New Zealand. Besides, the consumption behaviour of consumers in a developed and developing countries might be different (Reinstein, (1996).

In terms of family communication, a number of cross- cultural consumer socialisation studies have also been conducted focusing on parental styles or family influence (Rose, 1999; Rose, Boush, et al., 2002; Ward, Klees, & Robertson, 1987). These studies show that families in individualistic societies like New Zealand are seen as more open and expressive in comparison with families in collectivist societies (Ward et al., 1987). Previous studies in both western (Moschis, 1987; Moschis & Churchill, 1978; Moschis & Moore, 1979) and eastern cultures (Kamaruddin & Mokhlis, 2003; Sabri & Masud, 2005) have documented the importance of peers in adolescents' lives and the consumer socialisation process in both cultures. From the cross-cultural point of view, the fact that

collectivist societies encourage information sharing and group ties (Hofstede, 1980) may lead to more influence from peers in collectivist societies like Malaysia.

Taking into consideration that OTCs are promoted through television, radio and print advertisements in both New Zealand and Malaysia (Malaysian Medical Association, 2002; Norris et al., 2005) and can also be accessed via the internet (Gurau, 2005), and the fact that media accessibility is high in both New Zealand and Malaysia (Comrie et al., 2007; Euromonitor International, 2007; Marshall et al., 2006), it is possible that adolescents in both countries are exposed to and consume media in a similar way and might be socialised by media in the same way. However, past studies have suggested that their usage patterns are different. For example, de Mooij (2010) indicated that television was an important medium in collectivist and high power distance societies, a finding which is supported by the Sabri and Masud (2005) study in Malaysia. In that study, the researchers found over half of their adolescent subjects watched television with a mean of 3.6 hours a day. In New Zealand, a survey by Neilsen/NetRatings, a commercial media research company, revealed that young New Zealanders were enthusiastic internet users, while the Nielson Panorama Survey (2006), reported that the 15-25 years age group in New Zealand was less likely to read newspapers (Comrie et al., 2007). In contrast, in Malaysia, Sabri and Masud (2005) found that only 15.2% of the adolescents in their study surfed the internet and only 17.1% indicated internet advertisements influence their purchase decisions, while a newspaper was read by 55.6% of the respondents, suggesting greater exposure to the advertising and relevant articles contained within.

Few studies have been conducted to investigate the roles of medical personnel and retail staff in OTCs' consumption. In New Zealand, Emmerton and Shaw (2002) found the

involvement of pharmacy staff is influential when consumers do not have a particular brand in mind and for first time purchase. Hashim et al. (2007) in Malaysia found a doctor was preferred, followed by pharmacist, nurse and salesperson for advice about OTCs. However, the patterns of communication could not be concluded based on these two studies. Thus, it is proposed that:

H4: Socioeconomic status, family structure, levels of religiosity, family communication style, mass media usage, levels of a) normative peer influence, b) informational peer influence, and communication with c) medical personnel, and d) retail staff will differentially contribute to OTC consumer socialisation outcomes (knowledge, attitudes, and behaviour) in New Zealand and Malaysia.

3.5 The mediation effects of socialisation variables in their relationships between adolescent's background with knowledge, attitudes and behaviours towards over-the-counter pharmaceuticals

As discussed in the previous sub-sections, adolescents' family communication styles, levels of peer influence, mass media usage and communication with medical personnel and retail staff are expected to affect their perceived knowledge, attitudes and behaviours with regard to OTCs. Similarly, adolescents with different backgrounds (socioeconomic statuses, family structures and levels of religiosity) will be likely to differ in their perceived knowledge, attitudes and behaviours because they socialise differently with their family, peers, mass media and communication with medical personnel and retail staff. The differences occur perhaps due to the different environments in which they live. Therefore, it is expected that the effect of adolescents' backgrounds on the consumption-

relevant outcomes of perceived knowledge, attitudes and behaviours towards OTCs will be mediated by their interaction with socialisation agents. Based on these, it is hypothesised that:

H5: The degree of influence between an adolescent's socio-economic, family, or religious background and consumption-relevant outcomes of knowledge, attitudes, and behaviours towards over-the-counter medicines is mediated by a) family communication style, levels of b) normative peer influence, c) informational peer influence, d) mass media usage, and communication with e) medical personnel, and f) retail staff.

3.6 Chapter Summary

This chapter developed a conceptual model and the research hypotheses utilised by this project. The separate body of literature focusing on consumer socialisation and on OTCs was integrated to guide development of the model. The integration of the two provided richer theoretical guidance for the framework and led to the creation of a model that has a greater potential for more thoroughly explaining variations in young people's behaviour than one derived from either of these topical areas alone.

Looking back at the literature, it is evident that some of the links in the more inclusive model proposed here have been explored by previous studies. However, these studies are few in number, and have on the whole not offered unambiguous and conclusive outcomes. Since some of the links demonstrated in the model are proposed here for the first time, it is expected that this thesis will make contributions to the literature regarding adolescents'

consumer socialisation of the use of OTCs. The next chapter discusses the method applied to test the research hypotheses.

Chapter 4
Method

Taking into consideration the ethical issues and the practical aspect of reaching the target group in both countries, a survey method employing a classroom administration approach was used. By using classroom administration, the researcher was able to inform students about the purpose of the study, explain the questionnaire, ensure confidentiality of responses, explain the terminology and give clarification should the students not understand. Furthermore, the method avoided delay and minimised unreturned questionnaires from the respondents. It also allowed the researcher to collect the views of large numbers of people at one time (Davidson & Tolich, 2003).

4.1 The survey instrument

In designing the questionnaire, the literature provided a broad range of useful measures. The study incorporates theories in consumer socialisation, relevant to OTCs. To adequately measure the constructs, information from the theoretical and empirical literature in both consumer socialisation and OTCs was used. The draft questionnaires were pre-tested on high school students in New Zealand and Malaysia before actual data collection was administered.

4.1.1 Measurement items

A series of questions in a variety of formats was used to provide the data. These included dichotomous items, multiple response, rating and Likert-scales, scenarios with corresponding measures and open-ended questions.

Section A of the questionnaire measured five sub-topics; demographics, religiosity, experience with OTCs, label reading and perceived health condition. Label reading, although treated as an outcome of the socialisation process, was placed in this section as it related to experience with OTCs. As such it improves the continuity and flow of the questionnaire. Questions 1 to 10 of Section A consisted of a standard list of demographic and socio-economic items.

Measuring adolescents' socioeconomic status was not a straightforward task. Research into understanding adolescents' socioeconomic status has used various measures. While most studies used parents' education and/or occupation (Marjoribanks, 1995; Torre et al., 2006; Wang & Kao, 2007; Yi, Kung, Chen, & Chu, 2008) as a proxy for adolescents' socioeconomic status, some studies have also used pocket money (Currie, Elton, Todd, & Platt, 1997; Xie, Chou, Spruijt-Metz, Reynolds, & et al., 2007). This study used three variables to measure adolescents' socioeconomic status; pocket money spent in a week, and parents' occupations and education. To help respondents answer the demographic questions, most were presented in a categorical format. The amount of money spent per week, father's job and mother's job were in an open-ended format to obtain a more accurate response than a check list could offer. The answers were then collapsed into categories.

Religiosity was measured using a 6-point numerical scale for statements which were adapted from Worthington et al. (2003) and Mokhlis (2006a). Worthington et al. (2003) developed the Religious Commitment Inventory-10 in counselling psychology. The scale was tested in the United States and has strong estimated internal consistency, three-week

test-retest reliability, construct validity, discriminant validity and, criterion-related validity (Worthington et al., 2003). Mokhlis (2006a) adapted the Worthington et al. (2003) scale in Malaysia in his study on the effect of religiosity on shopping orientation and obtained good reliability (Cronbach's alpha) as well. These two studies illustrate that the scale has been validated in places with different distributions of religious affiliations and in different research topic areas. As used in the present study, four of the five questions have a scale ranging from 0 (not at all true of me) to 5 (totally true of me), while one question utilised a scale from 0 (never) to 5 (every day).

The next six questions measured experience with OTCs. These included usage, purchase, and label reading. Respondents were given a definition of OTCs and some examples. A screening question asking whether respondents had used OTCs was presented. Subsequently, reasons for OTCs usage were measured by a multiple-response checklist, adapted from previous OTCs' research (Chambers et al., 1997; Covington, 2006; Holstein et al., 2004). Questions about the purchase of OTCs were in a multiple-response format as well. A "yes" or "no" response established whether the respondents read labels followed by a question to determine how carefully they read them. For this question, a scale ranging from 0 (brief scan) to 5 (every word) was used. The final part of this section asked about respondents' health condition. Respondents were asked to indicate their level of health, ranging from 0 (poor) to 10 (excellent). To provide a finer indication of general health, respondents were then asked how many times they had been ill in the past 12 months.

Section B contained questions about consumer socialisation, beginning with interaction with family. Eight statements were included, of which two statements were general

statements about family interaction. The other six statements specifically focused on family interaction with regard to OTCs. This scale was developed in such way as to explore the degree to which the type of communication between the respondent and his or her parents was more socio or concept-oriented. All items were developed specifically for this study, but reflected the literature on family communication patterns (Chan & McNeal, 2003; Lachance et al., 2000; Mangleburg & Bristol, 1998; Moschis, Moore, & Smith, 1984) and OTCs. The original scale for family communication patterns was a 5-point Likert scale but was changed to a "yes" or "no" dichotomy for this study. The use of a short, precise, dichotomous scale helped students to make a quick and certain decision, considering the limited time given and to balance other more difficult questions at the end of the questionnaire. The decision to use the dichotomous format was made following the feedback from a pilot testing exercise.

The section continued with items measuring interaction with peers. Seven statements specifically focused on peers' interactions regarding OTCs, whilst one general statement was also included. As with family interaction, all items measuring peer interactions regarding OTCs were developed specifically for this study, but reflected the literature on normative and informational peer influences (Bearden et al., 1989; Mangleburg & Bristol, 1998) and OTCs. Similar to interaction with family, the original scale for peer interaction was changed from a 5-point Likert scale to "yes" or "no" answers, for the reason noted above.

Section B continued with interaction with the media. Respondents were asked to indicate the media they would use if they wanted to find information about OTCs. Ten options were listed and respondents could report more than one source in a multiple-response

format. The media listed were selected on the basis of their relevance to consumer socialisation (Ferle et al., 2000; Mehta & Keng, 1985; Moschis & Churchill, 1978) and from the OTCs' literature (Hughes et al., 2002; John & Evans, 2000). This was followed by three questions about internet usage. Additional questions about internet use were included as the internet was a significant source of market information among adolescents (Singh et al., 2003).

Communication by the school about drugs, both illegal and OTCs, was measured using four statements specifically developed for this study. These used a "yes" or "no" dichotomy. This was followed by two questions measuring communication with others who may be consulted by adolescents in the consumption of OTCs. Both items were in a multiple-response format. The first question listed the other people who may be consulted by adolescents. The list was based on previous OTCs studies (Chambers et al., 1997; Neafsey, Jarrín, Luciano, & Coffman, 2007; Paddison & Olsen, 2008; Yousef et al., 2008). The second question listed the type of information given by these people, adapted from Portner (1991).

Section C comprised questions about knowledge and attitudes. To measure adolescents' knowledge about OTCs, questions about marketplace knowledge and factual knowledge were presented. Marketplace knowledge refers to teens' understanding of consumer-related factors such as stores, shopping and prices (Mangleburg & Bristol, 1998). Based on this definition, three statements were developed. Measurement of factual knowledge consisted of four questions based on those used by Moore et al. (2002). These items measured adolescents' knowledge about OTCs and the potential consequences of use.

Questions about attitudes were divided into those about medicines in general (both prescribed and OTCs) and about OTCs only. A 5-point scale was used for both questions. Five items were used to measure attitudes toward OTCs and seven items were used to measure attitudes about medicine in general. Most of these items were a reflection of the literature on OTCs (Covington, 2006; Hughes et al., 1999; Huott & Storrow, 1997; Wazaify et al., 2005).

Section D contained questions to measure behaviour towards OTCs; proper and improper use. For sensitive behaviours such as these, Malhotra, Hall, Shaw and Oppenheim (2002) suggested a third-person technique, phrased as if they referred to other people. Lee (1993) recommended using "short descriptions of a person or a social situation which contained precise references to what were thought to be the most important factors in the decision making or judgement making processes of respondents" (Alexander and Baker, cited in Lee, 1993, page 79). Based on this, four scenarios were used to measure impressions of proper and improper use. A 5-point scale was used for this measurement.

The final question was open-ended, designed to collect thoughts, observations or opinions of the respondents about adolescents and OTCs. The researcher was hoping for richer insight into the way young people perceived and acted with regard to OTC medication (Malhotra et al., 2002).

4.1.2 Structure of the questionnaire

Demographic and religiosity questions are often perceived as personal by some respondents. Researchers such as Dillon, Madden, and Firtle (1994) have suggested that they should be asked at the end of the questionnaire. However, the questionnaire used

here consisted of other difficult and sensitive questions and, therefore, the demographic and religiosity questions were presented at the beginning of the instrument. Malhotra et al. (2002), as well as Crano and Brewer (2002) suggested placing sensitive and difficult questions, such as those used in this study, at the end of the questionnaire after a rapport has been established. This study followed this proposition, reasoning that the respondents would have become used to providing relatively less sensitive answers to who they were (e.g. demographics) prior to answering other difficult and sensitive questions.

4.1.3 The Pilot Study

Pilot tests of the questionnaire were conducted concurrently in both countries, with testing in Malaysia administered by contact persons who are high school teachers in their respective schools. It should be noted that the respondents of the pre-tests were drawn from the population of the actual survey in terms of background characteristics, as suggested by Malhotra et al. (2002).

The questionnaire was first developed in English and translated by the researcher into Bahasa Malaysia before the pilot test was conducted in Malaysia. The Malaysian draft questionnaire was verified by a fluent bi-lingual Malaysian high school teacher. Prior to pre-testing the questionnaires with high school students in Malaysia, brainstorming sessions were also conducted with two groups of Malaysian first-year undergraduate students studying in New Zealand, to gather their opinions and feedback. These students were selected as they had just finished high school and were still in their teens. In Malaysia, the pilot test was conducted at two high schools in Johor, with the assistance of two representatives who were teachers in these schools. These representatives were asked to brief the students about the pre-test. The students were also given instructions through

the information sheet attached to the questionnaires. They were asked to comment on any words, sentences, or scales that they found difficult to understand or were confusing, inappropriate to ask or uncomfortable to answer. They were also asked to give their opinions of the questionnaire. Fifty-nine students reviewed the questionnaires and tried to answer them. It was highlighted from the pilot test that the scenarios were too long and some of the wording was confusing. Based on the feedback received, changes were made to the scenarios. The scale for health, which was initially in graphic rating format, was also changed to a numerical format, as students commented that they found it confusing.

In New Zealand, the initial plan was to have a face-to-face discussion with groups of students to pre-test the questionnaires. However, the researcher had difficulties with a lack of cooperation from high school principals. One school finally agreed to participate, but did not allow the researcher to meet the students personally. Instead, the school distributed the questionnaires to students on behalf of the researcher. The same pre-test procedures that were applied in Malaysia also applied in New Zealand. Six students reviewed the questionnaires and gave their comments. The feedback received in New Zealand was similar to the feedback in Malaysia. Based on the feedback, changes were made to the questionnaire.

Following the pre-tests, it was noted that the students could not complete the questionnaire in 20 minutes. Considering the limited time allotted by the school and to balance other more difficult questions at the end of the questionnaire, modifications were made to questions regarding interactions with family, peers, and school from Likert scales to a dichotomous format. The change did not compromise the objectives of the study. For the Malaysian sample, another round of translation verification and back-translation was

conducted by two high school teachers in Malaysia before the actual data collection was carried out. Both the high school teachers were university graduates with a Bachelor's Degree in Linguistics. Both had over 15 years of teaching experience in English and in Bahasa Malaysia. A final version of the questionnaire was prepared and appears as Appendix 1 (English) and Appendix 2 (Bahasa Malaysia).

4.2 Sampling

Christchurch was selected to represent New Zealand, while Johor Bahru was chosen to represent Malaysia. Both cities were the second largest cities in each of the countries and reflected the ethnic composition of each nation. A two-stage sampling strategy was employed in this study. For the first stage in New Zealand, the comprehensive directory of schools published by the Ministry of Education was used to select schools to be included in the sample. There are 31 high schools listed in the Christchurch city area. Of these 31, 11 were eliminated as these were either boys-only or girls-only schools. Co-educational schools were targeted in order to balance the gender composition of the sample. The remaining 20 schools were then numbered and selected based on a table of random numbers. The same procedure was applied in Malaysia. A list of high schools was obtained from the Malaysia Ministry of Education. There were 36 high schools in the city of Johor Bahru. As the list did not state whether the school was a co-educational or boys-only or girls-only school, all 36 schools were numbered. Similar to New Zealand, the schools were selected using a table of random numbers. In both countries, if the selected school refused to participate, another school was chosen from the table of random numbers. Once the school was selected, the researcher discussed the possibility of

participating in this research with the school principal or the person identified as responsible for external relations at each school.

4.3 Survey procedure

In order to carry out the study in Malaysia, approval from the Economic Planning Unit (EPU), an Office in the Prime Minister's Department was required. To expedite the fieldwork, an application for data collection at high schools was sent while the researcher was still in New Zealand. Approval was granted prior to the researcher's arrival in Malaysia for data collection. In New Zealand the researcher approached the selected schools directly. No additional approval was needed beyond that of the Human Ethics Committee at Lincoln University. The Human Ethics approval is attached in Appendix 3.

4.3.1 The fieldwork

In New Zealand, data collection was undertaken over two months, April and May 2008. The researcher visited the selected schools[8] and invited them to participate. A letter of introduction to the principal, information sheets, parental consent forms (to allow their children's participation), and student consent forms were presented to the school principal during the visit. The initial plan was to have five schools participate, with approximately 100 students in each school. However, a lack of cooperation by principals reduced the number of participating schools to four. The reasons offered for rejection included that the school had participated in a number of studies previously, students and teachers were too busy and the study was not seen to give direct benefits to the school. Once the schools agreed to be involved in the study, several follow-ups were made to confirm the date of a

[8] Five schools were first selected using a table of random numbers. If the selected school refused to participate, the researcher selected the next school using the same procedure. Due to a lack of cooperation by the selected schools, the researcher ended up approaching all 20 schools, four of which agreed to participate.

visit to conduct the fieldwork. In most schools, the researcher was given a single lesson period to administer the questionnaire. On the agreed date, the researcher, assisted by two post-graduate students, distributed the questionnaire in the classroom. The teacher introduced the researcher and the rest of the process was handled by the researcher, with the teacher being present. The researcher explained what the students were being asked to do, and noted that the consent form was to be signed first before they completed the questionnaire. The researcher also stressed that participation was on a voluntary basis and that the students could choose not to participate. They were also reminded not to put their names on the questionnaire. While none of the students left the class, some students (n= 61, 17%) did not complete the questionnaire. These questionnaires were excluded from the analysis. To minimise distraction and peer pressure in answering the questionnaire, students' seats were separated and they were closely monitored. Although one hundred participants for each school (for a total of 400) had been hoped for, 360 students participated, which was sufficient for data analysis.

Immediately after completing the fieldwork in New Zealand, the researcher began fieldwork in Malaysia, June to July 2008. With approval given by EPU, getting access to schools was not a problem. As only four schools agreed to participate in New Zealand, the same number of schools was selected in Malaysia. All four high schools approached by the researcher agreed to participate in the study. For each school, one person was appointed to assist the researcher. This person was normally the school counsellor. To ensure that the teaching and learning process was not interrupted, the researcher could only administer the questionnaires when the teacher had a scheduled meeting or was away for workshops or courses. The appointed person in each school set the time and date of data collection. As a consequence, repeated visits by the researcher were required.

However, there were also times where the researcher went to the school at the date and time set by the school but could not administer the questionnaire because of their busy schedule.

On the agreed upon date, after the researcher was introduced to the students, the rest of the process was handled by the researcher. The assistant helped the researcher with distributing and collecting the questionnaire. All the procedures applied in New Zealand were also applied in Malaysia. As in New Zealand, none of the students left the class to show that they did not volunteer to participate, however there were a number of questionnaires that were not completed and were excluded from the analysis (n=72, 17%). Overall, 421 questionnaires were collected from the four schools which exceeded the researcher's target.

4.4 Data analysis

This section specifies the proposed analysis to test the survey data. The data were analysed using software SPSS version 17. In addition to the tests described in the following sections, descriptive analysis was also employed to explore respondents' backgrounds and provide preliminary ideas on how adolescents in New Zealand and Malaysia socialise with regard to OTCs.

4.4.1 Factor analysis

Factor analysis was employed to analyse whether the data obtained from Sections C and D of the survey conformed to the conceptualised knowledge, attitudes and behaviours dimensions. Once the dimensions had been determined, they were used as variables in

later analysis, which included chi-square and logistic regression. In this study, exploratory factor analysis was used, as no exact structure has been established to measure knowledge, attitudes and behaviours about OTCs. Principal Component analysis (PCA) was used for factor extraction. The factors were rotated using orthogonal factor solutions with the varimax procedure. Orthogonal rotation is mathematically simpler to handle (Hair Jr, Anderson, Tatham, & Black, 1998) and results in solutions that are easier to interpret (Pallant, 2007). The varimax procedure of orthogonal rotation was employed as it gives a clearer separation of the factors. For each resultant factor, an internal reliability was tested using Cronbach's coefficient alpha.

4.4.2 Chi-square analysis

The chi-square test of independence was used to explore the relationships between categorical variables. For example, it was used to test the relationship between country and attitudes toward OTCs. Criteria in line with Vaus (2002) were adopted for this study to measure the strength of the relationship between the two variables. These specify that phi or Cramer's V values ranging from 0.01 to 0.09 indicate trivial or insubstantial relationships, 0.10 to 0.29 indicate small or low relationships, 0.30 to 0.49 indicate medium relationships, 0.50 to 0.69 constitute large or high relationships, 0.70 to 0.89 indicate very large or very strong relationships and 0.90+ was seen as near perfect. It should also be noted that the lowest expected frequency in any cell should not be less than 5. Violation of this assumption would lead to loss of statistical power.

4.4.3 Logistic regression

The dependent variables in this study are categorical in nature (Refer to Appendix 4 and Section 5.2.1 for details)[9]. Thus, the most appropriate statistical test to assess how well a set of predictor variables predicts or explains a categorical dependent variable is logistic regression. Logistic regression answers the same question as multiple regression analysis, except that it has a dichotomous dependent variable (Tabachnick & Fidell, 2007). Unlike the multiple regression method, there is no assumption about distribution of the predictor variables such as normality, linearity or equal variance (Tabachnick & Fidell, 2007). However, it is very sensitive to high correlations among the predictor variables (multicollinearity) and it is also vey important to check for the presence of outliers as these can influence the results of logistic regression (Pallant, 2007).

In assessing the overall fit of the model, three approaches were used (Hair Jr et al., 1995; Pallant, 2007). The first approach is the statistical measure of overall model fit. This includes two tests. First, the chi-square test for the change in the log-likelihood (-2LL)[10] value from the base model, which is comparable to the F-test in the multiple regression. Smaller -2LL values than the base model or another prior model indicate better model fit (Hair Jr et al., 1995). Another statistical measure is the Hosmer and Lemeshow goodness-of-fit test. For this test, poor fit is indicated by a significant value less than 0.05 (Pallant, 2007). Therefore to support the model, a significant value greater than 0.05 is desired (Pallant, 2007).

[9] Appendix 4 (Construction of the variables), Section 5.2.1 (Distribution pattern of the data)
[10] The Log likelihood for base model (-2LogL0) is analogous to the total sum of squares value in linear regression (Hair Jr et al., 1995). Log likelihood value of models with predictor variables (-2Log Likelihood1) is analogous to the error or residual sum of squares in multiple regression (Hair Jr et al., 1995).

The second approach is the Pseudo R-square which is measured by The Cox and Snell R-square, and the Nagelkerke R-Square. These statistics provide an indication of the amount of variation in the dependent variable explained by the model (Pallant, 2007), which is similar to the coefficient of determination (R square) in multiple regressions, although they only approximate the variance interpretation (Tabachnick & Fidell, 2007). The last approach is classification accuracy, which measures the overall model fit. It provides an indication of how well the model is able to predict the correct category (e.g. proper behaviour/improper behaviour) for each case.

Information about the contribution or importance of each of the predictor variables is provided by the Wald test (Pallant, 2007; Tabachnick & Fidell, 2007). The Wald statistic tells whether the b coefficient for the predictor is significantly different from zero (Field, 2009). A coefficient that is significantly different from zero signifies that the predictor is making a significant contribution to the prediction of the outcome (Y) (Field, 2009). The sign of the coefficient tells the direction of the relationship, therefore negative coefficient values indicate that the increase in the independent variables will result in a decrease in the dependent variable (Pallant, 2007) and vice-versa.

More crucial to the interpretation of logistic regression is the value of the odds ratio (Field, 2009). The odds ratio is an indicator of the change in odds[11] resulting from a unit change in the predictor (Tabachnick & Fidell, 2007). Odds ratio is similar to the b coefficient in logistic regression but easier to understand (because it does not require a logarithmic transformation) (Field, 2009). An odds ratio value greater than 1 implies that, as the predictor increases, the odds of the outcome occurring increase (Field, 2009; Pallant,

[11] The odds of an event occurring are defined as the probability of an event occurring divided by the probability of that event not occurring (Field, 2009, p. 270)

2007). On the contrary, if the odds ratio value is less than 1, as the predictor increases, the odds of the outcome decrease (Field, 2009; Pallant, 2007). For categorical predictor variables such as family structure, the odds of the two categories were compared (intact families were compared with non-intact families). For categorical variables with more than two categories such as socioeconomic status used in this study, each category is compared with the reference group (usually coded with the lowest category). In this study low socioeconomic status is the reference group.

4.4.4 Test of the mediation effect

Tests of mediation in the present study followed the procedure recommended by Baron and Kenny (1986). Although one might argue that the Structural Equation Modeling may also be appropriate to test the effect of mediation, its analysis strictly requires meeting the assumption of multivariate normality and linearity (Tabachnick & Fidell, 2007), which does not exist in this study. Furthermore, the Baron and Kenny approach has been widely used and has been cited over 9,000 times (Gelfand, Mensinger, & Tenhave, 2009).

In testing the mediation effect, the Baron and Kenny approach is based on four steps. In step one, an outcome (Y) is regressed on an antecedent (X) to determine if an X to Y relationship exists to be mediated. To test this, a series of simple logistic regressions were performed. For example, in this study, each background variables is regressed with knowledge, attitudes and behaviours towards OTCs. Next, in step 2, the mediator (M) is regressed on X. This test should establish that the background variables are predictor to socialisation variables. Similarly, a series of simple logistic regression analyses was performed. Step 3 involved a regression of M in predicting Y. In this step, a series of simple regression analyses were performed with socialisation variables predicting knowledge, attitudes and behaviours. The last step, involved multiple regression analysis,

with X (background variables) and M (socialisation variables) predicting Y (knowledge, attitudes and behaviours).

The relationships in steps 1 to 3 must be significant. If one or more of these relationships are not significant, mediation is not possible. If steps 1 through 3 are significant, the researcher will proceed to step 4 to test for the mediation effect. In step 4, the relationship between M (background variables) and Y (knowledge, attitudes and behaviours) should become insignificant after controlling M (socialisation variables) to indicate full mediation. If the model is significant, a partial mediation is indicated.

4.5 Chapter summary

This chapter presented the methodological approach of the study. A structured questionnaire was designed where measures were consistent with previous research on consumer socialisation and OTCs. The questionnaire was pilot tested in both New Zealand and Malaysia before actual data collection was administered. The questionnaire for the Malaysian sample was translated into Bahasa Malaysia (the official language in Malaysia) and back-translated to ensure equivalence with the English version and ease of understanding. Following the pilot testing, some modifications were made. Overall, data collection went well in both countries, though some obstacles were faced by the researcher. The two cities chosen to represent each country were comparable and reflected the ethnic composition of both nations.

Chapter 5
Results, Analysis and Discussion

This chapter combines the results of the data analysis with a discussion of those results. The data gathered were analysed using the Statistical Package for Social Sciences (SPSS) Version 17. Demographic characteristics and descriptive statistics are presented first to obtain insights into the sample and to facilitate the interpretation of the results. In this chapter the findings of the results are compared to previous studies and potential explanations for differences are offered.

5.1 Sample characteristics

A total of 360 New Zealand and 421 Malaysian high school students participated in the survey. Of these, 61 (17%) of the New Zealand and 72 (17%) of the Malaysian questionnaires were not usable due to multiple incomplete answers or questionable responses. These questionable responses were especially evident in Sections C and D of the questionnaire which were concerned with knowledge, attitudes and behaviours toward OTCs. Deleting these resulted in samples of 299 New Zealand and 349 Malaysian adolescents. However, age differences between the two samples remained.

To maintain comparability between the samples, the 13 and 14 year old respondents from the Malaysian sample and the 19 year old respondents from the New Zealand sample were omitted from the analysis. Because this study is interested in understanding adolescents' learning processes in relation to OTCs, only those who had used the products were considered; those who had never used OTCs were deleted from the sample. It should be

noted that 92% of the respondents in Malaysia and 92% in New Zealand had used OTCs. As a result, the data comprised a total of 509 respondents; 276 respondents from New Zealand and 233 from Malaysia. New Zealand (mean = 16.64 years; sd = 0.614) respondents were slightly older than the Malaysian (mean= 16.00 years; sd = 0.746) respondents.

Table 5-1: Respondents' age

	New Zealand		**Malaysia**	
Age	f	%	f	%
15	4	1.4	64	27.5
16	108	39.1	107	45.9
17	148	53.6	61	26.2
18	16	5.8	1	0.4
Total	276	100	233	100

Tables 5-2 and 5-3 summarise the samples' characteristics and present a percentage comparison between the survey data and each country's population. The New Zealand population data is from the 2006 census (Department of Statistics, New Zealand), while the Malaysian population data is from the 2001 census[12].

[12] This was the latest census conducted in Malaysia.

Table 5-2: Sample characteristics (New Zealand)

Categories	f	%	NZ population (%)
Ethnicity			
Asian	20	7.2	9.2
European	195	70.7	67.6
Māori	16	5.8	14.6
Pacific Islander	12	4.3	6.5
Others	33	12	2.1
Total	**276**	**100.0**	**100.0**
Gender			
Male	115	41.7	48.8
Female	172	57.6	51.2
Missing	2	0.7	
Total	**276**	**100.0**	**100.0**
Religious affiliation			
Buddhism	3	1.1	1.3
Christianity	73	26.4	55.6
Hinduism	2	0.7	1.6
Muslim	2	0.7	0.9
No religion	170	61.6	34.7
Others	26	9.4	5.9
Total	**276**	**100.0**	**100.0**

Note: Respondents in the "other" category reported their ethnicity as New Zealander, European Māori, European Pacific Islander or European Asian.

As illustrated in Table 5-2, the sample was reasonably representative of the ethnic composition of the population in New Zealand. Māori may be under-represented in the sample, as the schools that provided the respondents were in the South Island, while most Māori reside in the North Island. In terms of gender, female respondents outnumbered the males, but not to any substantial degree. In terms of religious affiliation, the largest single group in New Zealand identified with the Christian faith. Those not professing any religion accounted for more than half of the respondents. The fact that the sample comprised young people may explain the disparities between the characteristics of the sample and the national population. Furthermore as reported in Euromonitor International (2009), New Zealand has one of the lowest rates of active participation in organised religion.

Table 5-3: Sample characteristics (Malaysia)

Categories	f	%	Malaysia population (%)
Ethnicity			
Chinese	101	43.3	24.5
Indian	34	14.6	7.2
Malay	90	38.6	50.2
Others	8	3.4	18.1
Total	**233**	**100.0**	**100.0**
Gender			
Male	105	48.1	50.9
Female	128	54.9	49.1
Missing	-	-	
Total	**233**	**100.0**	**100.0**
Religious affliliation			
Buddhism	66	28.2	19.2
Christianity	26	11.2	9.1
Hinduism	31	13.3	6.3
Muslim	101	43.3	60.4
No religion	7	3.0	0.8
Others	2	0.9	4.2
Total	**233**	**100.0**	**100.0**

Note: Respondents in the "other" category reported their ethnicity as "iban" (an indigenous group), members of other ethnic groups and non-Malaysian.

As Table 5-3 shows, the sample represented the breadth of ethnicity in the country although Chinese and Indians were over-represented while Malays were under-represented. However, the ethnic composition of Johor Bahru comprises 44% Malay, 41.5% Chinese, 9.1% Indians and 5.4% of other minorities. Therefore, the composition of the ethnicity in the survey was reasonably comparable to the regional percentages. In terms of gender, results were similar to New Zealand, where female respondents outnumbered males, but not to any substantial degree. As for religious affiliation, the largest proportion of the respondents was Muslim. This was followed by Buddhists, Hindus and Christians. However, compared to the national population, Muslims were under-represented, while Buddhists and Hindus were over-represented. Religion in Malaysia is highly correlated with ethnicity. Malays are usually Muslim, Chinese practise Taoism, Confucianism, Buddhism or Christianity, while Indians are most often Hindus or

Christians. As the Chinese and Indians were over-represented while Malays were under-represented in this study, the differences in religious affiliation are understandable.

5.2 Some considerations prior to analysis

5.2.1 Distribution pattern of the data

Sections C and D, as well as the religiosity measures in Section A, used interval scales. Therefore, these data can be used for parametric types of analysis. However, beyond interval or better scaling, parametric tests can only be used after satisfying two other conditions i.e. the population from which the sample was drawn has homogeneous or equal variances and the sample was normally distributed (Bryman & Cramer, 2005; Sekaran, 2003). The Levene test for equality of variances (see Appendix 5) showed almost half (38%) of the items had significant differences, which signified that the variances of the items were not equal. This indicated the second requirement was not fully satisfied. Results for the third condition, normality, showed none of the items were normally distributed (see Appendix 6). Therefore, the third condition was also violated and non-parametric tests were therefore the most appropriate. Thus, this study employed Chi-square analyses, Logistic regression (see Appendix 4 for construction of the variables) and the Baron and Kenny test of the mediation effect.

5.2.2 Factor analysis

Factor analysis was performed to analyse whether the data obtained from Sections C and D of the survey conformed to the conceptualised knowledge, attitudes and behaviours dimensions. The Kaiser-Meyer-Olkin measure of sampling adequacy indicates the value of 0.768, excess the minimum requirement of 0.6 recommended by Pallant (2007). Bartlett's test of sphericity is significant ($p = 0.000$) with Chi-square of 3933.859

indicating it was appropriate to perform factor analysis. Table 5-4 presents the Eigenvalues and percentage of variance for nine factors extracted based on a threshold of "1" for the Eigenvalues. The analysis extracted nine components, which explained 54.9% of the total variance in the dependent measure.

Table 5-4: Eigenvalues and percentage of variance

	Factors								
	1	2	3	4	5	6	7	8	9
Eigenvalues	4.506	3.211	2.255	1.962	1.779	1.434	1.298	1.143	1.113
% of variance	13.253	9.444	6.632	5.770	5.231	4.217	3.817	3.361	3.273

A cut-off point of 0.3 for factor loading was employed (Pallant, 2007). The component metrices were rotated and sorted and are attached in Appendix 7. The majority of the items have medium to high loadings (0.5 and above). This factor analysis also shows that some items, especially those measuring consumption behaviour and attitudes, are split into several different factors. In light of this analysis, a review of the composition of the factors led to the deletion of some of the items. The final solution is attached in Appendix 8. The reliability of the items was futher analysed using Cronbach's alpha test.

5.2.3 Reliability

Measuring reliability using Cronbach's Alpha has been extensively used by researchers. Opinions differ however, with regard to the ideal threshold alpha value. Vaus (1986) and Bernard (2000) suggested the value should be 0.8 or higher, Crano and Brewer (2002) and, Leong and Austin (2005) suggested it should be 0.75 or higher, while Salkind (2006) and Morgan, Leech, Gloeckner, and Barrett (2004) suggested a value of 0.7. Kerlinger and Lee (2000) recommended that an alpha value of 0.5 to 0.6 was acceptable in some cases. Pallant (2007) added that with short scales (e.g. scales with fewer than ten items), it was

common to find quite low alpha values. Considering the exploratory nature of the data and the smaller numbers of items used to measure many of the variables, it was decided that a Cronbach's alpha value of 0.6 would be appropriate for this study. Reliability tests for scales items in Sections A, C and D are reproduced in Table 5-5 (See Appendix 9 for details).

Table 5-5: Reliability analysis

Construct	Number of items	Cronbach's alpha
Section A:		
Religiosity	5	0.941
Section C:		
Knowledge about OTCs	7	0.860
Attitudes towards OTCs	6	0.619
Attitudes towards medicines (both OTCs and prescribed medicines)	5	0.579
Section D:		
Behaviour about consumption	9	0.612
Information seeking	2	0.695

Based on the results presented in the table above, internal consistency and reliability for attitudes towards medicines (both OTCs and prescribed medicines) did not meet the threshold of 0.6. It should be highlighted that attitudes towards medicines are not used in hypotheses testing, only in preliminary analyses. Other indices, however, had satisfactory alpha scores.

5.2.4 Validity

Content validity was emphasised during the development phase of the questionnaire. Crano and Brewer (2002) noted that a more secure means of assuring content validity was through the use of expert panels. In this study, content validity of the measurement instrument was assessed by seeking an expert opinion from two experienced members of the academic staff at this university. Face validity was also examined. Nunnally and Bernstein (1994) noted that unlike content validity, face validity was determined after the

measure had been developed. Based on this, opinions were also obtained from people directly involved with adolescents at schools, as they presumably have a better understanding of this group through their greater contact. Therefore an experienced high school principal and a school counsellor in Christchurch were asked to review the questionnaire. Changes were made according to their recommendations. This process was also followed in Malaysia with the assistance of two experienced high school teachers.

5.3 Descriptive analysis

Various measures were taken that provide perspective and insight into respondents' experiences with OTCs and socialisation to them. These measures included the range of illnesses experienced by respondents, where the medicines were purchased and the self-perception of health status. Variables relevant to the socialisation process were also measured, and are presented in table form below.

5.3.1 OTCs usage

The reasons for OTCs' usage are presented in Table 5-6. This questionnaire allowed for multiple responses and recognised that these were not mutually exclusive categories.

Table 5-6: Reasons for OTCs usage

Reasons for OTCs usage	New Zealand		Malaysia	
	f	%	f	%
Headaches	226	81.9	156	67
Colds and flu	225	81.5	126	54.1
Sore throat	202	73.2	117	50.2
Coughs	166	60.1	157	67.4
Muscle pain	116	42.0	26	11.2
Stomach-aches	102	37.0	109	46.8
Allergies/hayfever	101	36.9	15	6.4
Fever	74	26.8	159	68.2
Menstrual pain	71	25.7	24	10.3
Mouth ulcers	38	13.8	27	11.6
Sleeping aids	18	6.5	5	2.1
Others*	18	6.5	1	0.4

* Includes dental pain, itchy bites, joint pain, knee pain, ear ache, etc. As respondents could choose as many options as applied, the sum will exceed sample sizes.

The top five reasons for usage in New Zealand were headaches (81.9%), colds and flu (81.5%), sore throats (73.2%), coughs (60.1%) and muscle pain (42%). The top five reasons for usage in Malaysia were for fever (68.2%), coughs (67.4%), headaches (67%), colds and flu (54.1%) and stomach-ache (46.8%). Although not in complete agreement with previous studies in terms of order, the findings in both countries reflected similar types of usage as elsewhere. For example, Emmerton and Shaw (2002) found that nearly half of the OTCs purchased in New Zealand were for coughs, colds or sinus conditions, followed by sore throats, hay fever and allergies. Chambers et al. (1997) found that OTCs were mostly used by adolescents in Canada for head pain, followed by stomach pain, ear and throat pain, muscle, joint and back pain, as well as menstrual pain.

A high percentage of adolescents in both study locations, (186 respondents or 67.4% New Zealanders and 180 respondents or 77.3% Malaysians) have purchased OTCs themselves. This finding is consistent with Sansgiry and Cady (1996) who documented purchases of OTCs by young adults. Table 5-7 presents the different sources from which adolescents obtained OTCs.

Table 5-7: Sources of OTCs

Source	New Zealand		Malaysia	
	f	%	f	%
Family	227	82.2	180	77.3
Pharmacy	152	55.1	144	61.8
Supermarket	127	46.0	50	21.5
Friend	33	12.0	3	1.3
Convenience store	23	8.3	90	38.6

In both countries, the family was the most frequent source of OTCs. This was in accord with previous research by Chambers et al. (1997). The similarities between the adolescents in both countries suggested that, regardless of their cultural background, adolescents will go to their family to get medicines when they are sick. Family was followed by a pharmacy in both countries. The finding in Malaysia contradicted Hashim et al. (2007), who found that respondents preferred to buy OTCs from places other than pharmacies, except for multivitamins, wound care products, and of course, prescription drugs. The next most often used sources for OTCs were supermarkets for adolescents in New Zealand but convenience stores for adolescents in Malaysia. The finding in New Zealand concurred with a Euromonitor International (2010) report stating that many New Zealanders bought their OTCs from pharmacies and supermarkets. Unlike New Zealand, the fact that there are many small convenience stores in every residential area may explain why Malaysian adolescents obtained OTCs from convenience stores more often than from supermarkets. Obtaining OTCs from friends was among the least frequent sources in both countries.

5.3.2 Health condition

Table 5-8 presents adolescents' health conditions in both countries. As the table illustrates, the percentages for poor, moderate and excellent health conditions were comparable across both countries. Nearly all of the respondents reported that they were in moderate or

excellent health. Overall, therefore, these samples comprised respondents who were in good health. Such results may be due to those who were ill not being at school.

Table 5-8: Health condition

Categories	New Zealand		Malaysia	
	f	%	f	%
Poor	2	0.7	1	0.4
Moderate	112	40.6	92	39.5
Excellent	160	58.0	136	58.4
Missing	2	0.7	4	1.7
Total	276	100.0	233	100.0

5.3.3 OTCs consumer socialisation process

Prior to testing the proposed model (as set out in Figure 3-1), it is important to investigate how adolescents in each country socialise with the proposed socialisation agents. Similarities and differences will also be discussed in this section. Results from these analyses served as the foundation for interpreting the overall findings and as a screening process prior to hypotheses testing. Table 5-9 provides the frequencies for the various socialisation influences as reported by the subjects. It should be noted that the frequencies for normative and informational peer influences were presented only for those in the high category of influence. Similarly, for communication by school, the frequencies present responses for high communication by school. For mass media the frequencies indicate responses for usage of the media, while for communication with medical personnel and retail staff, the frequencies indicate respondents who have consulted with these individuals.

Table 5-9: OTCs consumer socialisation process

	New Zealand		Malaysia	
Socialisation process	**f**	**%**	**f**	**%**
Family communication				
Concept oriented	136	49.3	163	70.0
Socio-oriented	140	50.7	70	30.0
Peer influence				
Normative	94	34.1	93	39.9
Informational	44	15.9	48	20.6
Mass media usage				
Television	126	45.7	178	76.4
Radio	23	8.3	50	21.5
Print media	76	27.5	142	60.9
Internet	197	71.4	102	43.8
Communication by school	14	5.1	19	8.2
Communication with				
Medical personnel	179	65.1	190	81.5
Retail staff	40	14.5	95	40.8

There was a statistically significant relationship between country setting and family communication pattern ($\chi^2 = 21.45$, df = 1, p = 0.000). Malaysian adolescents in this sample were more likely to indicate that their parents exercised a concept-oriented type of family communication. This finding is quite surprising as, being a collectivist society, Malaysian parents were expected to exercise a socio-oriented family communication style (Rose, 1999; Rose et al., 1998) which emphasizes conformity to parental values. It was interesting to note that the New Zealand sample was almost evenly split, although slightly more respondents indicated that their parents exercised a socio-oriented type of family communication. As an individualist society, New Zealand parents were expected to exercise the concept-oriented type of family communication (Rose, 1999; Rose et al., 1998). This study did not confirm this expectation but supports the study by Rose et al. (2002) that cultural differences in individualism versus collectivism cannot completely explain cross-cultural differences in consumer socialisation.

Peer influence was similar in both locations; normative peer influence (χ^2 =1.639, df = 1, p = 0.170); informational peer influence (χ^2 = 1.620, df = 1, p = 0.165). The percentages for both types of peer influence suggest that peer influence was not perceived by teenagers themselves to be high. Two conclusions can therefore be drawn from these findings. First, regardless of culture, respondents were similar in their attempt to conform to peers' expectations about OTCs (normative peer influence) or to gather information about the products (informational peer influence). Second, peer influence was low with respect to socialisation of OTCs. This finding contradicts Sabri and Masud (2005) and Neeley (2005) who found high peer influence in consumer socialisation among teenagers and Chambers et al. (1997) on the important role that peers play in OTCs' consumption. Earlier, Moschis and Moore (1979) discovered that adolescents rely on peers more than on parents for products where peer acceptance is an important consideration, which may not be the case with OTCs. This may correspond to our earlier discussion suggesting that friends were among the least likely source for obtaining OTCs (refer Table 5-7).

The search for information from media revealed a statistically significant relationship between country setting and mass media usage; television (χ^2 =48.371, df = 1, p = 0.000); radio (χ^2 =16.666, df = 1, p = 0.000); print media (χ^2 = 56.232, df = 1, p = 0.000); and the internet (χ^2 =38.580, df = 1, p = 0.000). The internet was the only medium in which New Zealand respondents scored higher than Malaysian. A closer look at each media revealed that in New Zealand, the internet was the most frequent source, followed by television. Very few adolescents would use print media or radio to any substantial degree. This indicates how powerful the internet has become among adolescents. This is also reflected in the survey in 2007 by Nielsen/NetRatings, a commercial media research company,

which revealed that young New Zealanders were enthusiastic internet users. Almost all respondents (91.7%) in New Zealand accessed the internet from home, followed by school (70.8%). Overall, 16.7% of New Zealand respondents spend more than three hours a day on the internet for personal use. It was also reported in the Nielson Panorama Survey (2006) that those in the 15-25 years age group in New Zealand were less likely to read newspapers (Comrie et al., 2007). That may explain why print media had little impact on the respondents. Nearly half of the respondents indicated they would use television as a source of information, a consequence, perhaps, of the high exposure of medicines advertisements on New Zealand television. Norris et al. (2005) reported there were 340 medicine advertisements screened on New Zealand television with an average of 1 per 102 minutes, of which 37% were advertisements for OTCs.

Adolescents in Malaysia use television as source of information, followed by the internet. This finding supports deMooji (2010) that television was an important medium in collectivist society. The internet was mainly accessed from home (68.7%) or cybercafés (47%). Overall, 20.6% of the respondents spend more than three hours on the internet for personal use every day. An earlier study by Wee (1999) found the average time Malaysian teenagers spent on the internet was 4.89 hours per week and that very few used it for study-related activities. Two conclusions can be drawn from this finding. First, in both countries, the least-used form of media chosen was radio, supporting earlier research by Mehta and Keng (1985). Second, the use of the internet has grown dramatically among adolescents in both countries, which supports the findings of Singh et al. (2003) and Kaur and Medury (2011). Taking into consideration the high rate of access (98.6% and 84.5% of the respondents in New Zealand and Malaysia respectively, had access to the internet) and usage of the internet among the respondents, it is obvious that this media will be used

as a commercial communication tool. These findings suggest that in order to maximise their resources and economic efficiency, marketers should only use the most common and popular media this market segment uses.

With regard to communication by schools in both countries, school seemed not to play an important role in educating the respondents about OTCs ($\chi^2 = 1.504$, df = 1, p = 0.159). This finding was consistent with Chambers et al. (1997), although their study was conducted over 13 years ago. This result was rather disappointing, as adolescents spend much of their time in school. A closer look at the analysis also suggested that the issue of OTCs was not highlighted in schools, whether as a curriculum or non-curriculum subject. Schools seemed to only focus on illegal drugs, ignoring legal drugs like OTCs. Due to the low frequencies, which indicate the insignificant role schools play with respect to OTCs, further testing was not conducted.

Country setting was significantly related to communication with medical personnel ($\chi^2 = 116.364$, df = 1, p = 0.00) and retail staff ($\chi^2 = 43.130$, df = 1, p = 0.000). Over half of the respondents in New Zealand had consulted medical personnel for information and advice if they were not sure about OTCs, and only a small percentage had consulted retail staff. Although the percentages in Malaysia were higher for communication with medical personnel and retail staff, overall the results show adolescents in this sample seek information about the medicines from professionals and do not only rely on information from family and friends, thus contradicting Stephens and Johnson's (2000) finding.

The following table presents the type of information requested by respondents. It should be noted that the question allowed for multiple responses and recognised that these were not mutually exclusive categories.

Table 5-10: Type of information

	New Zealand		Malaysia	
Type of information	f	%	f	%
When to take the medicine	163	59.1	165	70.8
How much to take	159	57.6	168	72.1
Side effects	122	44.2	107	45.0
How to take the medicine (e.g. with food or empty stomach)	106	38.4	136	58.4
How much it cost	100	36.2	104	44.6
Benefits	97	35.1	110	47.2
Which OTC is right for me	74	26.8	93	39.9
What brand is good	66	23.9	54	23.2

In both countries, "when to take the medicine" and "how much to take" was the type of information most frequently asked for, and offered, by the agents. The percentages in Table 5-10 suggest that Malaysian respondents were more likely than their New Zealand counterparts to ask for additional information. As discussed above, the fact that more Malaysian respondents had consulted with the agents may relate to this finding.

5.3.4 Attitudes toward medicines

Attitude towards medicines in general was thought to be of some useful importance. It was reasoned that such an attitude could be a composite of knowledge, efficacy and an understanding of the issue of proper or improper use. Likert scaled items were designed to capture this. Means and standard deviations for each, by sample, are presented in Table 5-11.

Table 5-11: Attitudes toward medicines (both prescribed and OTCs)

Item	New Zealand		Malaysia	
	Mean*	SD	Mean*	SD
Since OTCs are taken without a prescription, it is very important to know all about them	2.45	1.092	2.21	1.257
Medicines do make me feel better when I am ill	2.53	1.089	2.63	1.115
Misuse and abuse of medicines is a problem in a society	2.26	1.133	1.89	1.175
Precsription medicines work better than OTCs	2.49	0.987	2.24	1.198
Young people are more likely to misuse medicines than adults	2.92	1.167	2.30	1.128

*5- point scale: 1 strongly agree, 5 strongly disagree

The mean of all items was below the midpoint of the scale, indicating a general tendency to agree with the statements. On this measure, the sample appeared to be quite similar. Comments providing depth to some of these results are presented in the next section.

5.4 Qualitative comments about OTCs

Respondents were given the opportunity to express their thoughts and feelings about OTCs in an open-ended question. The comments they provided underwent content analysis and were classified into themes as follows.

5.4.1 Preference to cure naturally

Although all respondents in this study had experienced with OTCs, their comments revealed they did not want to depend very much on the medicines when they were sick. Reasons included the fact that medicines were unnatural and that the body can recover itself over time. It was also revealed from the feedback that medicines were taken only when really needed. For example, comments in New Zealand included *"I don't rely on it to fix my health unless I really need to".* Such comments reflected a report by the Neilson

Global Online Consumer Survey (2008) that New Zealanders often take a wait-and-see approach to minor ailments rather than purchasing medication as soon as they feel unwell. Comments from Malaysian adolescents echo those of the New Zealand teen. For example *"If we take medicine, our bodies will be weak, so I prefer to cure naturally"*.

5.4.2 Improper use of OTCs

Their comments also demonstrated that adolescents in both countries were aware that medicines were being used improperly. Reasons for improper use included; OTCs being easy to get, not thinking about or not knowing the side effects, misusing the medicines because adults did it first, a substitute for other drugs, lack of knowledge, and peer influence. Adolescents also seemed to know how the medicines were being misused or abused; for example for calming, slimming, uses with other medicines or mixed with something else. Such comments include *"Caffeine pills/drinks and painkillers such as Panadol and Nurofen are often used together"* and "*Some teenagers abuse OTCs by mixing Coke with Panadol"*. They also knew the consequences of improper use of OTCs such as fatal injuries and damaged internal organs.

5.4.3 Concern about young people and OTCs

Comments from adolescents in both countries illustrated a special concern for younger people. They suggested that young people did not think about the safety of OTCs and just wanted positive results. Some respondents suggested that something must be done. For example, publishing information about OTCs, restricting the purchase age and educating young people about the medicines especially by increasing awareness in school, "*It may help young people to stop misusing OTCs if there is an age limit on it (purchase) because 13-14 year olds won't know how to use them properly or know the effect that can*

happen". It was also suggested that adolescents should ask their parents first before taking any OTCs and only take those medicines approved by the Ministry of Health.

5.4.4 Seeing a doctor versus taking OTCs

The comments also suggested some adolescents in this sample prefer OTCs while some prefer to see a doctor when they are sick. Those who prefer OTCs see them as effective, easy to get and cheap. Most importantly they do not have to see a doctor. Some comments indicated that seeing a doctor was a waste of money especially for the poor. *"Doctors are rip off, we got to pay about NZD40 for them to send us home and say just rest up".* Some recommended taking OTCs first and then seeing a doctor if one was still sick. Those who did not prefer OTCs believed that prescription medicines worked better than OTCs. They thought some OTCs were ineffective and might possibly have a negative effect on the body. Thus, they suggested it was better to see a doctor when one was sick rather than take OTCs as to them, medicines prescribed by doctors were safer. The doctor could give advice about health and appropriate medicines.

5.5 Testing of the hypotheses

5.5.1 The effect of adolescent's background on consumer socialisation process of OTCs

It was thought that different components of adolescents' social environment might influence the way they learned how to be consumers. In this section, hypotheses related to that concept are investigated.

5.5.1.1 Descriptive statistics of the explanatory variables

Table 5-12 provides descriptive statistics of the explanatory variables used in examining how background variables may relate to socialisation processes for both the New Zealand and Malaysian samples. As indicated by the χ^2 values, the statistical results show strong associations of all background variables and adolescents in the different settings. A high percentage of Malaysian adolescents in this sample come from low socioeconomic status (SES) families, while more New Zealand adolescents were in moderate and high status situations. As for family structure, the majority of the Malaysian sample had an intact family, while the New Zealand respondents were almost split between intact and non-intact family structure. The results also show that a high percentage of the Malaysian sample was in the high religiosity category, while the New Zealand sample generally was in the low religiosity category. Very clearly, these two settings are significantly different in terms of SES, family structure and religious practice.

Table 5-12: Descriptive statistics of explonatory variables in socialisation process

Variables		**New Zealand (%)**	**Malaysia (%)**	**Statistic test**
SES				
	Low	37.4	67.5	χ^2 =37.800*
	Medium	48.5	24.4	
	High	14.1	8.1	
	Total	100.0	100.0	
Family structure				χ^2 =63.890*
	Intact	58.7	90.6	
	Non-intact	41.3	6.4	
	Total	100.0	100.0	
Religiosity				χ^2 =193.737*
	Low	82.2	22.1	
	High	15.4	77.9	
	Total	100.0	100.0	

*Significant at 1% level

5.5.1.2 Effects of adolescent's background on socialisation process

A series of multiple logistic regression analyses was conducted to see if the effect of adolescents' background (independent) on the socialisation process (dependent) could be

predicted. New Zealand and Malaysian data were analysed separately. The results are summarised in Table 5-13.

Table 5-13: Logistic regression for effect of background on socialisation process

	New Zealand				*Malaysia*			
Dependent variables	Model χ^2	Model Sig	df	% correct	Model χ^2	Model Sig	df	% correct
Family communication	4.101	0.393	4	56.4	2.315	0.678	4	70.7
Normative peer influence	3.874	0.423	4	66.7	7.196	0.126	4	59.3
Informational peer influence	2.708	2.708	4	82.8	8.730	0.068	4	78.9
Television	**10.328***	**0.035**	4	60.3	**15.408***	**0.004**	4	75.1
Radio	6.419	0.170	4	92.2	9.149	0.057	4	77.1
Print media	0.970	0.914	4	74	2.681	0.613	4	62.4
Internet	7.029	0.134	4	71.1	**12.693***	**0.013**	4	62.4
Medical personnel	9.461	0.051	4	67.5	3.189	0.527	4	82.9
Retail staff	**10.334***	**0.035**	4	84.7	**19.997***	**0.001**	4	65.4

* Significant at 5% level.

It can be seen in Table 5-13 that in New Zealand, the Omnibus Tests of Model coefficients are only significant for television use (χ^2=10.328, p<0.05) and communication with retail staff (χ^2=10.334, p<0.05), though nearly so for communication with medical personnel. This indicates that background variables distinguish respondents who would use television as a source of information in learning about OTCs and those who would not; correctly classifying 60.3 percent of the cases. Results for communication with retail staff also indicated that the model can distinguish between those who consulted with retail staff and those who did not, and correctly classified 84.7 percent of cases. In Malaysia, the Omnibus Tests of Model coefficients indicated that use of television (χ^2=15.408, p<0.05), the internet (χ^2=12.693, p<0.05) and communication with retail staff (χ^2=1.369, p<0.05) were statistically significant. These results indicate these models were able to distinguish between respondents who would use television and internet as sources of information when learning about OTCs and those who would not and can also distinguish between those who had consulted with retail staff and those who had not. The model correctly

classified 75.1 percent of the cases for television use, 62.4 percent for internet use and 65.4 percent for communication with retail staffs.

Of the four mass media types, only televisyen usage is significant in both countries, the use of the internet is only significant in Malaysia. Previous studies have documented the effect of SES on reading printed media (Shim, 1996) as well as advertisements and news items in newspapers (Moschis, 1987). The effect of family structure on media usage has also been documented by Brown et al. (1990). As for religiosity, Finnegan and Viswanath (1988) suggested that highly religious individuals preferred print media. In contrast Golan and Day (2010) not only found that the daily newspaper was not trusted by these individuals, but that other printed media, news in magazines, was not related to religiosity. As shown in Table 5-12, New Zealand and Malaysian respondents are very different in all background variables, yet the results for both print media and radio usage are each insignificant while results for the use of television are significant in both countries. This suggests that background variables could neither predict the use of print media and radio nor could they differentiate the use of print media, radio and television. They seem similar even though they come from different backgrounds and cultures.

Logistic regression results for predicting adolescents' background by the use of television in New Zealand is presented in Table 5-14. The non-significant Hosmer and Lemeshow test results indicate that the goodness of fit is satisfactory, implying the model fits the data adequately. The model as a whole only explained between 4.9 percent (Cox & Snell R Square) and 6.6 percent (Nagelkerke R Square) of the variance in the use of television[13].

[13] The Cox and Snell measure is based on log-likelihoods and takes into account the sample size. However, this measure cannot achieve a maximum value of 1. The Nagelkerke measure adjusts Cox and Snell so a

This means that approximately only 4.9 to 6.6 percent of the variance in whether an adolescent would use television as source of information about OTCs can be predicted from the linear combination of the independent variables, which is very low. The Wald tests[14] show only one independent variable (SES) contributed significantly to the model. Moderate SES recorded an odds ratio of 0.420, which is less than 1, indicating that those in the moderate SES status group were less likely to use television as a source of information about OTCs when compared to those in the low SES group (the reference category), assuming other factors in the model are constant. This finding is in line with Shim (1996) who found that those of low SES were more receptive to television commercials. The fact that television is a free media might be the reason why it is more likely to be used by those in the low rather than the moderate SES.

Table 5-14: Logistic regression predicting use of television (New Zealand)

Independent Variables	**B**	**S.E**	**Sig**	**Odds Ratio**
SES			0.024	
SES1	-0.867	0.317	0.006	0.420
SES2	-0.487	0.447	0.275	0.614
Family structure	0.530	0.308	0.086	1.698
Religiosity	-0.469	0.434	0.280	0.628
Constant	0.246	0.255	0.335	1.279
Hosmer & Lemeshow χ^2	0.734			
Hosmer & Lemeshow df	6			
Hosmer & Lemeshow Sig	0.994			
Cox & Snell R Square	0.049			
Nagelkerke R Square	0.066			

Family structure and religiosity did not contribute significantly to the model. Earlier research documented that children in single parent households watch more television than children in two parent households (Brown et al., 1990; Tinson et al., 2008). Due to their higher exposure, it was thought this media might have had greater significance as an agent

value of 1 could be achieved (Tabachnick & Fidell, 2007). Most authors report both Cox and Snell and Nagelkerke R Square such as Pallant (2007) and Adwere-Boamah (2011)

[14] The Wald test gives information about the contribution or importance of each predictor variables (Pallant, 2007)

in socialisation. Furthermore, it was logical that in the absence of one of the parents, teenagers would get information about OTCs from other sources, such as television. However, this was not found in this study. The fact that a majority of adolescents in this study reported low religiosity might explain why religiosity could not predict television usage.

Regarding the use of television in Malaysia, Table 5-15 shows the model as a whole explained between 7.2 percent (Cox & Snell R square) and 10.9 percent (Nagelkerke R Square) of the variance. The Hosmer and Lemeshow test indicates the goodness of fit is satisfactory. Only religiosity was statistically significant in the model. The odds ratio of 3.234, with a regression coefficient that shows a positive relationship, indicates that religious respondents were over three times more likely to use television as a source of information, assuming other values of the other variables were held constant. Although this finding contradicts Choi et al. (2010), it concurs with an earlier study by Mokhlis (2006b) in Malaysia, which found that highly religious individuals were more likely than less religious individuals to search for more market information from media advertisements. It is also possible that because religious individuals tended to perceive higher risks, be less secure, and have less self confidence than less religious individuals, they were more likely to be worried about potential risks associated with a product (Delener, 1990a). As a result, they might look for more information from television which could be the most accessible medium that offered a reasonable volume of useful information about such products.

Table 5-15: Logistic regression predicting use of television (Malaysia)

Independent Variables	B	S.E	Sig	Odds Ratio
SES			0.086	
SES1	-0.735	0.388	0.058	0.480
SES2	-0.911	0.584	0.119	0.402
Family structure	0.511	0.727	0.482	0.600
Religiosity	1.174	0.371	0.002	3.234
Constant	0.643	0.342	0.482	0.600
Hosmer & Lemeshow χ^2	3.944			
Hosmer & Lemeshow df	4			
Hosmer & Lemeshow Sig	0.414			
Cox & Snell R Square	0.072			
Nagelkerke R Square	0.109			

Results for use of the internet in Malaysia are presented in detail in Table 5-16. The goodness of fit of the model is satisfactory, as indicated by results of The Hosmer and Lemeshow tests. However, the model as a whole only explained between 6 percent (Cox & Snell R square) and 8 percent (Nagelkerke R Square) of the variance in internet usage. SES was the only predictor that contributed significantly to the model. The result shows that more of the respondents in the high SES group would use the internet as a source of information compared to the moderate and low SES group. The odds ratio of 5.284 among those of high SES indicates that they were over five times more likely to use the internet as a source of information, while those of moderate SES were just over two times more likely to use the internet, controlling other factors in the model. The fact that a higher percentage of adolescents in moderate (84%) and high SES (94%) categories in this study have internet access at home and spent more time using the internet may explain these findings. Tinson et al. (2008) suggested that households with two-parent incomes (which indicates higher SES) were better able to afford personal computers and thus connectivity to the internet would be more likely. They found adolescents in this type of household used the internet to find information about things they were thinking of buying.

Table 5-16: Logistic regression predicting use of the internet (Malaysia)

Independent Variables	B	S.E	Sig	Odds Ratio
SES			0.004	
SES1	0.791	0.337	0.019	2.206
SES2	1.665	0.608	0.006	5.284
Family structure	-0.103	0.654	0.875	0.903
Religiosity	0.219	0.355	0.539	1.244
Constant	-0.714	0.340	0.036	0.490
Hosmer & Lemeshow χ^2	6.775			
Hosmer & Lemeshow df	4			
Hosmer & Lemeshow Sig	0.148			
Cox & Snell R Square	0.060			
Nagelkerke R Square	0.080			

Background variables could not predict communication with medical personnel in either country, but did serve as a predictor for communication with retail staff. Though previous studies relating background and communication with individuals such as medical personnel and retail staff are minimal, Cuzzolin and Benoni (2010) have documented the effect of SES and communication with pharmacists. This study however could not confirm these claims.

In the logistic regression predicting communication with retail staff in New Zealand (Table 5-17), the Hosmer and Lemeshow's goodness of fit test is non-significant, implying a good fit of the model. The pseudo R square indicates that the model explained between 5 percent (Cox & Snell R Square) and 6.6 percent (Nagelkerke R Square) of the variance in consultation with retail staff. Only family structure was found to be significant, which recorded an odds ratio of 2.578, indicating that those who stay with intact families were 2.578 times more likely have consulted with retail staff about OTCs as compared to those in non-intact families. This is opposite to the researcher's expectation, as it was thought that in the absence of either parent, respondents would turn to retail staff for assistance. SES and religiosity were not significant predictors to communication with retail staff. Given that those in low SES were more likely to search extensively for information (Gore

et al., 1994), it was expected that SES would affect communication with retail staff in some way. This however was not evident in this study. The fact that religious people did not trust salespeople (Choi et al., 2010) might be the reason religiosity was not a predictor of communication with retail staff.

Table 5-17: Logistic regression predicting communication with retail staff (New Zealand)

Independent Variables	**B**	**S.E**	**Sig**	**Odds Ratio**
SES			0.173	
SES1	-0.120	0.462	0.796	0.887
SES2	0.832	0.551	0.131	2.297
Family structure	0.947	0.395	0.020	2.578
Religiosity	0.508	0.530	0.337	1.662
Constant	-2.292	0.395	0.000	0.101
Hosmer & Lemeshow χ^2	2.524			
Hosmer & Lemeshow df	5			
Hosmer & Lemeshow Sig	0.773			
Cox & Snell R Square	0.050			
Nagelkerke R Square	0.066			

In looking at the logistic regression predicting communication with retail staff in Malaysia (Table 5-18), the model as a whole explained between 9.3 percent (Cox & Snell R square) and 12.5 percent (Nagelkerke R Square) of the variance. The insignificant results of Hosmer and Lemeshow tests also confirmed the model fits the data adequately. The Wald tests show two variables (SES and religiosity) contributed significantly to the model. Regression coefficients for both significant variables indicate negative relationships with communication with retail staff. Both variables had an odds ratio value of less than 1. The odds ratio for those with moderate SES of 0.341 also implies that they were less likely to have consulted with retail staff about OTCs as compared to those with low SES. As compared to those in the low SES group, adolescents in the moderate category have parents with higher educational levels and incomes. Gore et al. (1994) discovered that the higher the education level and family income, the lower the involvement of the consumer in the OTCs purchase decision, which they interpreted to mean that the buyer did not

search extensively for information and therefore may not consult with retail staff, before making the purchase decision. Because the cost of OTCs is not as substantial with respect to moderate incomes as it is for those in the low category, these consumers may not engage much in asking for information from retail staff.

The odds ratio of 0.433 for religiosity indicated that respondents scoring high on the religiosity scale were less likely have consulted with retail staff about OTCs as compared to low religiosity individuals, assuming other factors are held constant. This finding is consistent with Choi et al. (2010), who found that religious consumers did not trust claims made by salespeople and were less likely to use them as product information sources.

Table 5-18: Logistic regression predicting communication with retail staff (Malaysia)

Independent Variables	**B**	**S.E**	**Sig**	**Odds Ratio**
SES			0.005	
SES1	-1.075	0.375	0.004	0.341
SES2	-1.168	0.618	0.059	0.311
Family structure	1.202	0.712	0.091	3.327
Religiosity	-0.837	0.361	0.020	0.433
Constant	0.609	0.342	0.075	1.838
Hosmer & Lemeshow χ^2	1.369			
Hosmer & Lemeshow df	3			
Hosmer & Lemeshow Sig	0.713			
Cox & Snell R Square	0.093			
Nagelkerke R Square	0.125			

Insignificant results were found for family communication in both countries. Previous findings on the effect of SES on family communication are mixed. While Churchill and Moschis (1979) found SES had an insignificant impact on family communication, Gerris et al. (1997) later found they were related. Significant findings were documented in the relationship between family communication and family structure by Lachance et al. (2000), but Geuens et al. (2002) found it to have only minor impact. The findings of this study therefore are in line with Churchill and Moschis (1979). The findings in normative

and informational peer influences were also not significant in both countries. However, most previous studies on peer influence were not conducted from normative and informational peer influence perspectives making it difficult to compare. The literature suggests SES (Moschis & Moore, 1978), family structure (Noack et al., 2001; Olson, 1982) and religiosity (Bahr & Hoffmann, 2008) are related to peer influence in general, to a certain extent.

A summary of objective one is presented in Table 5-19. The aim of the objective is to examine the degree to which an adolescent's SES, family and religious background may influence how he or she learns to be a consumer of over-the-counter pharmaceuticals. A series of multiple logistic regression analyses were conducted to predict socialisation with family, peers, mass media (television, radio, printed media and the internet) and communication with medical personnel and retail staff using SES, family structure and religiosity as predictors. In Malaysia only, the use of the internet, television and communication with retail staff can be predicted by adolescents' background, while in New Zealand only the use of television and communication with retail staff can be predicted. Although statistically significant, it should be noted that the variances explained by the background variables were very small.

The results clearly indicated that background variables were in general found to be distantly related to the influence of socialisation agents, a conclusion which is congruent with Shim (1996). The social setting within which an interaction of individual and socialisation takes place, measured by background variables in this study, was thought to affect an individual's learning. However, this study seems to support Moschis (1978) who suggested that such variables were often used as control variables to analyse the influence

of socialisation agents on other variables rather than having direct relationships as suggested in objective one. Looking at each of the hypotheses presented in Table 5-19, it was obvious that results for H1a, HIb, H1c (television, radio and print media) and H1d were similar in both countries. The only different result was H1c (the use of the internet). These results suggest that, overall, respondents in both settings were similar with regard to the effect of background variables on the influence of socialisation with socialisation agents.

Table 5-19: Summary of objective one

Hypotheses	**New Zealand**	**Malaysia**
H1a An adolescent's family socioeconomic status, family structure and level of religiosity will be associated with family communication patterns.	Not supported	Not supported
H1b An adolescent's socio-economic status, family structure, and level of religiosity will be associated with i) normative peer influence and ii) informational peer influence.	 Not supported Not supported	 Not supported Not supported
H1c An adolescent's family socioeconomic status, family structure and level of religiosity will be associated with mass media usage. i) Television ii) Radio iii) Print media iv) Internet	 Supported Not supported Not supported Not supported	 Supported Not supported Not supported Supported
H1d: An adolescent's family socioeconomic status, family structure, and level of religiosity will be associated with communication with i) medical personnel, and ii) retail staff.	 Not supported Supported	 Not supported Supported

5.5.2 Effects of adolescents' background on knowledge, attitudes and behaviours

Results from a series of multiple logistic regressions conducted to predict the effect of adolescents' background (independent) on knowledge, attitudes and behaviours (dependent) are presented in Table 5-20.

Table 5-20: Logistic regression for the effect of background on knowledge, attitudes and behaviours

	New Zealand				*Malaysia*			
Dependent variables	Model χ^2	Model Sig	df	% correct	Model χ^2	Model Sig	df	% correct
Knowledge	3.472	0.482	4	62.9	**12.304***	**0.015**	4	79.7
Attitudes	1.577	0.813	4	70.8	4.595	0.113	4	63.2
Behaviours:								
Label reading	2.543	0.657	4	60.3	7.481	0.331	4	85.0
Consumption	9.178	0.057	4	97	4.804	0.304	4	97.1

*Significant at at 5% level.

None of the models is significant in New Zealand, while in Malaysia only the model predicting knowledge about OTCs is significant. Although it was thought that one's socioeconomic status would result in differences in knowledge, attitudes or behaviours, it seems that these elements in one's background are not good predictors of OTCs' socialisation outcomes. For example, Lokker et al. (2009) found SES was associated with inappropriate use of OTC products and Yousef et al. (2008) found it was associated with knowledge of OTC products.

Different environments experienced by adolescents in intact and non-intact families are also thought to produce differences in knowledge, attitudes and behaviours such as those discovered by Lachance et al. (2000) and Ahuja et al. (1998). However, this study did not find that such relationships exist. One's background probably affects behaviours with regard to other legally obtained products such as tobacco (Soteriades & DiFranza, 2003)

and problem behaviours such as drinking, stealing, gambling, loafing, truancy, vandalism and gang membership (Amin, Yusof, & Haneef, 2006) but not for OTCs. Overall, it can be concluded that adolescents' SES, family structure and religiosity are not strong predictors in understanding their knowledge, confidence attitudes, label reading and consumption behaviours of OTCs.

As can be seen from Table 5-20, the model was significant (χ^2= 12.304, p<0.05) for knowledge about OTCs. This indicates that the model was able to distinguish between adolescents who perceived they have low knowledge or high knowledge. The percentage of correct predictions was 79.7%. The chi-square value for the Hosmer and Lameshow goodness-of-fit test is 1.285 with a significance level of 0.864. A value above 0.05 indicates the model is a good fit (Pallant, 2007). Only one variable, religiosity (Table 5-21) was found to be significantly associated with knowledge about OTCs. The odds ratio for religiosity of 3.466 implies that those who are religious are almost 3.5 times more likely to report that they have high knowledge about OTCs, assuming other factors are held constant. This finding contradicts Stulhofer, Soh, Jelaska, Bacak and Landripet (2011) and Feldman et al. (2011) who found religiosity was inversely related with knowledge about human sexuality and HIV/AIDS transmission respectively. As in Delener's (1990) suggestion above, that religious people seem to perceive greater risk in a purchase decision, are less secure, and have less self confidence than less religious individuals, they may thus worry more about a product's potential risks. As a result, they may learn more about this product class and therefore be more likely to report that they have more knowledge. The Cox & Snell R Square indicates the model explained between 5.9 percent while the Nagelkerke R Square indicates it explained 9.3 percent of the variance in knowledge about OTCs.

Table 5-21: Logistic regression predicting knowledge about OTCs (Malaysia)

Independent Variables	B	S.E	Sig	Odds Ratio
SES			0.529	
SES1	-0.165	0.410	0.688	0.848
SES2	0.793	0.809	0.327	2.211
Family structure	0.976	1.086	0.368	2.655
Religiosity	1.243	0.384	0.001	3.466
Constant	0.429	0.346	0.327	1.535
Hosmer & Lemeshow χ^2	1.285			
Hosmer & Lemeshow df	4			
Hosmer & Lemeshow Sig	0.864			
Cox & Snell R Square	0.059			
Nagelkerke R Square	0.093			

Objective two examines the degree to which an adolescent's socio-economic, family, or religious background may influence consumption-relevant outcomes of knowledge, attitudes and behaviours toward over-the-counter medicines. The results for objective two are summarised in Table 5-22. As illustrated, only Hypothesis H2a is supported in Malaysia. Other hypotheses were not supported in either setting. Thus, it can be concluded that, as far as adolescents' background is concerned, respondents in New Zealand and Malaysia are similar in regard to the attitudes, label reading and behaviour related to OTCs consumption, despite their differences demonstrated in Table 5-12. This suggests that, regardless of their background and cultures, these adolescents are similar. The results also imply that, in general, background variables are not good predictors of knowledge, attitudes and behaviours related to OTCs.

Table 5-22: Summary of objective two

Hypotheses	New Zealand	Malaysia
H2a An adolescent's socioeconomic level, family structure, and level of religiosity will be associated with level of OTCs knowledge	Not supported	Supported
H2b An adolescent's family's socio-economic level, family structure, and level of religiosity will be associated with a confident attitude towards OTCs.	Not supported	Not supported
H2c: An adolescent's socioeconomic level, family structure, and level of religiosity will be associated with i) OTC label reading, and ii) recommending proper consumption of OTCs	 Not supported Not supported	 Not supported Not supported

5.5.3 The effect of consumer socialisation processes on the consumption-relevant outcomes of knowledge, attitudes, and behaviours towards over-the-counter medicines

5.5.3.1 Descriptives statistics of the explanatory variables

The independent variables used in the model for both countries have been discussed above and presented in Table 5-9. To recap, the table shows strong association between countries and family communication patterns, the use of television, radio, print media and the internet, as well as communication with medical personnel and retail staff. No associations were found for either type of peer influence. With respect to family communication, while the New Zealand sample was almost evenly split between socio-oriented and concept-oriented family communication patterns, Malaysian respondents were more likely to indicate that their parents exercised a concept-oriented type of family communication pattern. All mass media types examined in this study showed strong

relationships with countries. Except for the internet, all other media were more likely to be used by the Malaysian respondents. The internet was the only medium in which the New Zealand adolescents scored higher than the Malaysian adolescents. A high percentage (81.5%) of Malaysian respondents had consulted with medical personnel, while a smaller yet substantial percentage (65.1%) of the respondents in New Zealand had done so. Almost half of Malaysian respondents had communicated with retail staff regarding OTCs, while only about a quarter had done so in New Zealand.

5.5.3.2 Effects of consumer socialisation process variables on knowledge, attitudes and behaviours towards over-the-counter medicines

Table 5-23 summarises the results of multiple logistic regressions performed to examine the effect of consumer socialisation processes (independent) on knowledge, attitudes and behaviours regarding OTCs (dependent). In New Zealand, the Omnibus Tests of Model coefficients indicate that the model was significant for knowledge (χ^2=26.633, p<0.05) and label reading (χ^2=19,747, p<0.05). This shows these models were able to distinguish between those respondents who have high knowledge from those with low knowledge, and between those who read the label carefully and those who do not. The logistic regression model for knowledge correctly classified 65.1% of the cases, while the logistic model for label reading correctly classified 66% of the cases. In Malaysia, the model was only significant with knowledge about OTCs (χ^2=17,577, p<0.05), which implies that the model was able to differentiate between those who have high knowledge and those who have low knowledge. The model correctly classified 77.9% of the cases. In both countries, attitudes and OTCs' consumption behaviours could not be predicted by any of the socialisation agents proposed in this study.

Table 5-23: Logistic regression for the effect of consumer socialisation variables on knowledge, attitudes and behaviours

	New Zealand				*Malaysia*			
Dependent variables	Model χ^2	Model Sig	df	% correct	Model χ^2	Model Sig	df	% correct
Knowledge	**28.633***	**0.001**	9	65.1	**17.577***	**0.040**	9	77.9
Attitudes	16.049	0.066	9	73.4	9.099	0.428	9	61.6
Behaviours:								
Label reading	**19.747***	**0.020**	9	66.0	13.483	0.142	9	84.7
Consumption	6.761	0.662	9	96.2	6.499	0.689	9	96.9

*Significant at at 5% level.

Table 5-24 details the results of logistic regression for knowledge. As seen in Table 5-24, the model as a whole explained between 10.1 percent (Cox & Snell R Square) and 13.7 percent (Nagelkerke R Square) of the variance in knowledge about OTCs. The non-significant Hosmer & Lemeshow's goodness of fit implies a good fit of the model. Inspection of the Wald statistics revealed that three independent variables (family communication, normative peer influence and radio use) contributed significantly to the model.

Table 5-24: Logistic regression predicting the effect of consumer socialisation variables on knowledge about OTCs (New Zealand)

Independent Variables	**B**	**S.E**	**Sig**	**Odds Ratio**
Family communication	0.556	0.282	0.049	1.744
Normative peer influence	0.874	0.329	0.008	2.396
Informational peer influence	-0.380	0.420	0.821	0.684
Television	0.470	0.295	0.111	1.601
Radio	-1.182	0.513	0.021	0.307
Print media	0.222	0.338	0.512	1.248
Internet	-0.256	0.300	0.394	0.774
Comm. with medical personnel	-0.021	0.293	0.943	0.979
Comm. with retail staff	0.850	0.448	0.058	2.339
Constant	-0.082	0.324	0.800	0.921
Hosmer & Lemeshow χ^2	8.303			
Hosmer & Lemeshow df	8			
Hosmer & Lemeshow Sig	0.404			
Cox & Snell R Square	0.101			
Nagelkerke R Square	0.137			

The strongest predictor was normative peer influence, which recorded an odds ratio of 2.396. This indicated high knowledge was over two times more likely to be reported

among those high in normative peer influence, assuming the values of other variables are held constant. This suggested that a strong desire to conform to peers' expectations may motivate adolescents to learn about OTCs and therefore view themselves as being more knowledgeable. Previous studies have compared normative peer influence with informational peer influence on scepticism towards advertising (Mangleburg & Bristol, 1998) and shopping attitudes and behaviours (Mangleburg et al., 2004). Unlike the finding of this study, they found the impact of informational peer influence was greater than the impact of normative peer influence, which means the information that peers provided has more impact than the pressure to conform to peers' expectation. With regard to knowledge, Mangleburg and Bristol (1998) studied only the relationship of informational peer influence with marketplace knowledge and found it significant. Normative influence was not examined in their study. Unlike Mangleburg and Bristol (1998), this study found that such relationship does not exist and instead found normative peer influence is related to knowledge. This suggests that the motivation to impress the group to which teens belong contributes to greater perceived knowledge about OTCs.

The odds ratio for family communication indicates that a person in concept-oriented family communication patterns was 1.744 times more likely to perceive that they have high knowledge than a person in socio-oriented family communication patterns. This makes sense, as this type of family communication pattern encourages two-way communication and, as a result, children learn more about the product (Moore & Moschis, 1981; Moschis, 1985). This type of communication pattern: allows for evaluations of others' opinions when making decisions (Moschis, 1985), allows children to form their own opinions (Moore & Moschis, 1981) and consider alternative points of view (Carlson, Grossbart, & Stuenkel, 1992), stresses the development of children's problem-solving

skills (Mangleburg & Bristol, 1998) and enables parental emphasis on finding the best quality or product benefits from price (Kim et al., 2009). As a result, children in a concept-oriented family communication pattern may have better knowledge than those in a socio-oriented type.

Regression coefficients for radio use indicate negative relationships with knowledge. Radio usage recorded an odds ratio of 0.307 indicating that a person who would use radio as a source of information was 0.307 less likely to report that they have high knowledge. Such a situation may have occurred because teens listen to radio for entertainment and leisure (Ferle et al., 2000) rather than for information. Hence, radio will not increase their knowledge. This corresponds to an earlier study by Mehta and Keng (1985), which revealed that there was no effect from radio on consumers' knowledge.

The logistic regression predicting the effect of consumer socialisation variables on label reading is presented in Table 5-25. Approximately 9 percent (Cox & Snell R Square) to 12.3 percent (Nagelkerke R Square) of the variance in label reading is explained by the logistic model. The Hosmer & Lemeshow's goodness of fit test indicates a good fit of the model as illustrated by its non-significant value. The Wald statistics demonstrated that only family communication patterns and use of print media made a significant contribution to prediction. Family communication pattern with an odds ratio of 2.565 indicates respondents whose family exercise concept-oriented family communication were over two times more likely to read the label carefully compared with respondents in socio-oriented family communication patterns. This was not surprising, taking into consideration the nature of the concept-oriented communication as discussed above.

Table 5-25: Logistic regression predicting the effect of consumer socialisation variables on label reading (New Zealand)

Independent Variables	B	S.E	Sig	Odds Ratio
Family communication	0.942	0.312	0.003	2.565
Normative peer influence	0.246	0.351	0.493	1.279
Informational peer influence	-0.642	0.464	0.166	0.526
Television	-0.586	0.329	0.075	0.557
Radio	0.214	0.621	0.730	1.239
Print media	0.858	0.377	0.023	2.359
Internet	0.066	0.336	0.843	1.069
Comm. with medical personnel	0.008	0.342	0.982	1.008
Comm. with retail staff	-0.035	0.422	0.934	0.966
Constant	0.981	0.453	0.030	2.666
Hosmer & Lemeshow χ^2	3.392			
Hosmer & Lemeshow df	8			
Hosmer & Lemeshow Sig	0.907			
Cox & Snell R Square	0.090			
Nagelkerke R Square	0.123			

The odds ratio for the print media usage implies that respondents who would use print media as source of information were 2.359 more likely to report they read the label carefully. This finding supports previous studies. For example, Hughes et al. (2002) reported that magazines were used to obtain information about OTCs. It has also been revealed that magazines were used by adolescents to get health education information (Ferle et al., 2000) while newspaper readership provided the strongest predictor of consumer knowledge (Shim, 1996). Thus, it is possible that the information provided in printed media encouraged adolescents to read the labels more carefully.

In Malaysia, only the logistic regression model predicting the effect of consumer socialisation process variables on perceived knowledge is significant. As demonstrated in Table 5-26, the Cox & Snell R Square and the Nagelkerke R Square indicate that 7.5% to 11.5% variance in perceived knowledge about OTCs can be predicted from the model, and the Hosmer and Lemeshow test indicates a good fit of the model. Reading printed media as a source of information about OTCs was the only significant predictor. The odds ratio

of 3.239 suggests that those who read print media were over three times more likely to report they have higher knowledge. Print media such as magazines were used by adolescents to obtain information about health education (Ferle et al., 2000). The information provided in printed media may help adolescents know more about OTC products. This study's finding is also congruent with those of Shim (1996) and Mehta and Keng (1985) which showed the importance of reading printed media on consumer's knowledge. Reading printed media is also indirectly related to the development of competence about consumer matters (Lachance & Legault, 2007).

Table 5-26: Logistic regression predicting the effect of consumer socialisation variables on knowledge about OTCs (Malaysia)

Independent Variables	**B**	**S.E**	**Sig**	**Odds Ratio**
Family communication	-0.497	0.392	0.205	0.608
Normative peer influence	0.064	0.405	0.875	1.066
Informational peer influence	0.485	0.517	0.348	1.624
Television	0.404	0.402	0.315	1.497
Radio	-0.342	0.449	0.447	0.711
Print media	1.175	0.376	0.002	3.239
Internet	0.412	0.352	0.242	1.509
Comm. with medical personnel	0.265	0.427	0.535	1.303
Comm. with retail staff	-0.241	0.363	0.441	0.507
Constant	-0.104	0.534	0.846	0.902
Hosmer & Lemeshow χ^2	9.166			
Hosmer & Lemeshow df	8			
Hosmer & Lemeshow Sig	0.329			
Cox & Snell R Square	0.075			
Nagelkerke R Square	0.115			

The results for objective three are summarised in Table 5-27. It was the aim of objective three to examine the effect of consumer socialisation processes on knowledge, attitudes and behaviours toward OTCs. The effect of consumer socialisation processes on perceived knowledge was evident in both countries. In New Zealand, normative peer influence, family communication and radio use were predictors of perceived knowledge about OTCs, while in Malaysia reading printed media was the only significant predictor. Results for confidence attitudes and recommending proper consumption towards OTCs

were not significant in either country, while the possible relationship between socialisation agents and the act of label reading was only supported in New Zealand. The only significant predictor for label reading in New Zealand is reading printed media. It can be concluded that the overall results for objective three revealed that socialisation processes influence outcomes related to OTCs only to a certain extent. From the cross cultural perspective, it seems that adolescents in this study are similar. Differences between the cultures were only observed in H3c (label reading).

Table 5-27: Summary of objective 3

Hypotheses	New Zealand	Malaysia
H3a An adolescent's family communication style, level of normative peer influence, level of informative peer influence, mass media usage, and history of communicating with a) medical, and b) retail staff will be associated with knowledge about OTCs.	Supported	Supported
H3b An adolescent's family communication style, level of normative peer influence, level of informative peer influence, level of mass media usage, and history of communicating with a) medical, and b) retail staff will be positively associated with a confident attitude towards OTCs.	Not supported	Not supported
H3c An adolescent's family communication style, level of normative peer influence, level of informative peer influence, level of mass media usage, history of communicating with medical staff, and history of communicating with retail staff will be positively associated with i) OTC label reading, and ii) recommending proper consumption of OTCs.	 Supported Not supported	 Not supported Not supported

5.5.4 Comparison of adolescents' consumer socialisation in New Zealand and Malaysia

The aim of objective four was to examine and compare consumer socialisation of adolescents living in Malaysia and New Zealand. As far as the process of socialisation is concerned, the results have been discussed in detail in section 5. 3.3. It was evident from the results that adolescents in New Zealand and Malaysia are different in family communication patterns, media usage and communication with other purchase-relevant individuals. Similarities were observed for both normative and informational peer influence.

Table 5-28 presents the results of chi-square tests for relationships between country of residence and outcomes of consumer socialisation processes; perceived knowledge, attitudes, label reading and the act of recommending certain consumption behaviours.

There was a statistically significant difference in perceived knowledge between respondents in New Zealand and Malaysia, with Malaysian respondents perceiving they had higher knowledge than New Zealand respondents. Perhaps earlier findings on H2a (the effect of background variables on perceived knowledge) and H3a (the effect of the socialisation process on perceived knowledge) can explain this result. Results for H2a suggest that religiosity is a predictor of adolescents' perceived knowledge about OTCs in Malaysia, where those who claimed higher religiosity are almost 3.5 times more likely to report that they also have high knowledge about OTCs. In Malaysia as Table 5-12 shows, 77.9% of the respondents claim they are highly religious. The fact that religious individuals in earlier research by Delener (1990) tended to perceive higher risks, be less secure, have less self confidence and be more likely to worry about the potential risks

associated with a product also apply today. If so, this may encourage present-day respondents to learn more about a product and therefore be more likely to report that they have greater knowledge. Furthermore Mokhlis (2006b) found that highly religious individuals were more likely than less religious individuals to search for more market information; higher religiosity may thus explain the reason they might have greater knowledge. Results in testing H3a show that in Malaysia, reading printed media is a predictor of adolescent's knowledge about OTCs. As illustrated in Table 5-9, 60.9% of adolescents in Malaysia would go to print media to find information about OTCs. Further, Sabri and Masud (2005) reported that newspapers and magazines were read by 55.6% and 47.5% respectively of their respondents in Malaysia. In the same study, they found that 76% of these adolescents look for product information in magazines. This result may also relate to their information-searching behaviour as presented in the scenario-based questionnaire, where more Malaysian adolescents will search for information about OTCs ($\chi^2 = 13.102$, df = 1, p = 0.000). The percentage revealed 75.5% of Malaysian respondents were in the high search category.

A significant difference in confidence in attitudes towards OTCs between the cultures was noted with New Zealand respondents displaying higher confidence than Malaysian respondents. The fact that New Zealand is an individualistic and low power distance culture might explain the difference. Being in an individualistic culture, New Zealand adolescents are likely to be more vocal in expressing their opinions and insisting on their rights (Hofstede, 1980), have parents who treat them as individuals (Chan & McNeal, 2003), are allowed more consumption autonomy and are expected to develop independent consumption at early age (Rose, 1999). Further, growing up in a low power distance society, adolescents in New Zealand would be expected to be socialised to be more

independent (Hofstede, 1980). Malaysian adolescents on the other hand, are raised in a high power distance country, and would be likely to view their parents as benevolent decision- makers (Hoecklin, 1995) since children are not regarded as competent until a later age.

With regard to reading the product label, chi-square analysis reported below in Table 5-28 showed a significant difference between the cultures. More Malaysian respondents indicated that they read the label more carefully. This may also explain the earlier finding that the Malaysian respondents thought they had better knowledge and may relate to our earlier finding on confidence. Malaysian respondents reported less confidence about products which may encourage them to read labels more carefully. In addition, parents in collectivist societies appear more circumspect with their children (Ward et al., 1987). Such attitudes may lead parents in collectivist societies to encourage children to read labels more carefully.

As far as perceived consumption behaviour is concerned, no significant differences were found between the cultures. Adolescents in both cultures indicated they will use such products carefully. Only 3.7% and 3.4% of the respondents indicated improper use of OTCs in New Zealand and Malaysia respectively. This is encouraging, but since the questionnaire was completed in the school setting, the issue of response bias might have played a role in their responses. This result is not quite comparable to previous studies. Feinberg (2006) reported that 10% of adolescents in US have abused OTCs and Huott and Storrow (1997) revealed that 2% of their adolescent respondents made suicide attempts by ingesting OTCs. Chambers et al. (1997) noted that 11.2% and 13.6% of their respondents indicated inappropriate use of ibuprofen and aspirin respectively. The result in Malaysia

may also be explained from a cultural perspective. As a collectivist society, Malaysia is a "shame" society. Doing something like using OTCs improperly (such as abuse) is behaviour against the norms that will make people lose face (deMooji, 2010).

Table 5-28: Chi-Square tests

					New Zealand		Malaysia	
		df	Sig	Phi/ Cramers V	f	%	f	%
Knowledge	15.833	1	0.000	0.182				
Low knowledge					104	38.2	49	21.4
High knowledge					168	61.8	180	78.6
Attitudes	6.831	1	0.009	0.120				
Low confidence					72	26.3	87	31.4
High confidence					202	73.7	145	62.5
Label reading	22.435	1	0.000	0.235				
Not careful					78	36.8	34	16
Careful					134	63.2	178	84
Consumption behaviour	0.000	1	1.000	0.007				
Improper					10	3.7	8	3.4
Proper					259	96.3	224	96.6

Hypotheses 4 posit that socioeconomic status, family structure, levels of religiosity, family communication style, mass media usage, levels of a) normative peer influence, b) informational peer influence, and communication with c) medical personnel, and d) retail staff will differentially contribute to OTC consumer socialisation outcomes (knowledge, attitudes, and behaviour) in New Zealand and Malaysia. Results for H2 (the effect of background variables on knowledge, attitudes, and behaviour) and H3 (the effect of socialisation process on knowledge, attitudes, and behaviour) also document more similarities than differences between the cultures. These results thereby only marginally support H4.

5.5.5 Mediation tests

To test whether the effect of background variables on knowledge, attitudes and behaviours toward OTCs were mediated by socialisation process, this study used procedures

suggested by Baron and Kenny (1986). They specified four conditions that need to be satisfied among independent variables (background), mediators (socialisation process) and dependent variables (knowledge, attitudes and behaviours) to establish mediation.

First, independent variables (background) must affect the dependent variables (knowledge, attitudes and behaviours). A series of simple logistic regression was conducted to test for this. In New Zealand, only the effect of SES on the act of recommending proper consumption was significant (χ^2= 8.543, df = 2, n = 276, p<0.05). In Malaysia, only religiosity was significant with perceived knowledge (χ^2= 14.408, df = 2, n = 233, p<0.01). Following Baron and Kenny's (1986) guidelines, there is no need to test for mediation effects for those relationships that are not significant (as, then, there is no relationship between antecedent and outcome to be mediated). Further testing was therefore conducted on the two significant results only.

For the second condition of mediation, the independent variable is regressed on the mediators. Thus, in New Zealand only SES was regressed on all the socialisation process variables. Similarly, in Malaysia only religiosity was regressed on socialisation process variables. Results of logistic regressions in New Zealand revealed that SES only affects television use (χ^2= 7.357, df = 2, n = 276, p<0.05) and communication with medical personnel (χ^2 = 6.663, df = 2, n = 276, p<0.05). In Malaysia, religiosity has an impact only on television use (χ^2 = 11.922, df = 1, n = 233, p<0.05) and communication with retail staff (χ^2 = 4.021, df = 1, n = 233, p<0.05). Other socialisation agents failed the second condition, indicating a mediation effect does not exist for those variables.

For the third condition, the mediator is regressed on the dependent variables. In New Zealand, television use and communication with medical personnel were regressed on the act of recommending proper consumption of OTCs. Knowledge, attitudes and label reading were not tested with respect to television use and communication with medical personnel as these variables were not significant under the first condition. For the same reason, in Malaysia only television use and communication with retail staff were regressed on perceived knowledge. Results of logistic regression in New Zealand revealed that neither television use nor communication with retail staff was significant in the act of recommending proper consumption of OTCs, indicating a lack of a mediation effect. Similarly, in Malaysia the effects of television use and communication with retail staff on perceived knowledge were not significant, implying that a mediation effect does not exist in Malaysia as well and, therefore conducting the last set of tests suggested by Baron and Kenny is a moot point.

Based on these results, it can be concluded that background variables on knowledge, attitudes and behaviours regarding OTCs did not mediate socialisation by family, peers, mass media and communication with medical personnel and retail staff. These results are similar for New Zealand and Malaysia. Thus, Hypothesis 5 is not supported. The current study's findings are congruent with Nguyen et al. (2009). In that study, mass media and peer communication did not mediate the relationship between disruptive family events and materialism. In addition, socio-oriented family communication also did not mediate SES effects on materialistic values (Nguyen et al., 2009).

5.6 Chapter Summary

The hypotheses developed in Chapter 3 have been examined through various statistical analyses and discussion of the results has been offered. To answer objectives one to three, a series of multiple logistic regressions was performed. Objective four was analysed using the chi-square test. The last objective follows the procedures by Baron and Kenny (1986). A summary of significant results is displayed in Table 5-29.

Table 5-29: Summary of significant results

<table>
<tr><td colspan="2">Objective 1
Examine the degree to which an adolescent's socioeconomic, family or religious background may influence how he or she learns to be a consumer of over-the-counter pharmaceuticals.</td></tr>
<tr><th>New Zealand</th><th>Malaysia</th></tr>
<tr><td>Adolescents' socioeconomic status is a predictor of television use, where respondents of moderate socioeconomic status were less likely to use television as a source of information about OTCs compared to those of low socioeconomic status.

Family structure is a predictor of communication with retail staff, where those who stay with intact families were more likely have consulted with retail staff about OTCs as compared to those in non-intact families.</td><td>Adolescents' religiosity is a predictor of television use, where religious respondents were over three times more likely to use television as a source of information.

Socioeconomic status is a predictor of internet usage, where more of the respondents of high socioeconomic status would use the internet as a source of information compared to moderate and low socioeconomic status.

Both socioeconomic status and religiosity predict communication with retail staff. Religious respondents and those of moderate socioeconomic status were less likely to have consulted with retail staff about OTCs as compared to their counterparts.</td></tr>
<tr><td colspan="2">Objective 2
Examine the degree to which an adolescent's socioeconomic, family or religious background may influence consumption-relevant outcomes of perceived knowledge, attitudes, and behaviours towards over-the-counter medicines</td></tr>
<tr><th>New Zealand</th><th>Malaysia</th></tr>
<tr><td>None of the hypotheses is significant.</td><td>Adolescents' religiosity is a predictor of perceived knowledge about OTCs, where religious respondents are more likely to report that they have high knowledge.</td></tr>
<tr><td colspan="2">Objective 3
Examine the effect of consumer socialisation variables on the consumption-relevant outcomes of</td></tr>
</table>

knowledge, attitudes, and behaviours toward over-the-counter medicines	
New Zealand	**Malaysia**
Family communication, normative peer influence and radio use are predictors of perceived knowledge about OTCs. The strongest predictor was normative peer influence, where high knowledge is more likely to be reported among those high in normative peer influence. This was followed by family communication patterns, where a person in concept-oriented family communication patterns was more likely to perceive they have high knowledge than a person in socio-oriented family communication patterns. For radio usage, a person who would use radio as a source of information was less likely to report that they have high knowledge. Utilisation of print media is a predictor of reading an OTC's label. Respondents who would use print media as a source of information were more likely to report that they read the label carefully.	Reading print media is a predictor of perceived knowledge. Those who read print media were more likely to report they have higher knowledge.
Objective 4 Examine and compare the consumer socialisation of adolescents living in Malaysia and New Zealand with respect to over-the-counter medicines.	
With respect to socialisation agents, significant differences were found in family communication patterns, mass media usage, and communication with medical personnel and retail staff. With respect to socialisation outcomes, significant differences were found in perceived knowledge, attitudes and label reading. Malaysian respondents perceived they had higher knowledge and read the label more carefully than the New Zealand respondents, while New Zealand respondents showed higher confidence attitudes compared to Malaysian respondents. Overall, the effect of background variables and socialisation process on knowledge, attitudes and behaviours show more similarities than differences.	
Objective 5 The mediation effects of socialisation variables in their relationships between adolescents' background with knowledge, attitudes and behaviours toward over-the-counter pharmaceuticals	
New Zealand	**Malaysia**
There was no statistical evidence of a mediation effect.	There was no statistical evidence of a mediation effect.

Chapter 6
Conclusions

6.1 Introduction

The starting point for this study was when the researcher identified a lack of research on OTCs done from a consumer behaviour perspective. The major focus of the study then became to investigate how adolescent consumers in New Zealand and Malaysia are socialised with respect to OTCs. The researcher was driven by the following imperatives: the use of these products is widespread among adolescents; self-medication and the global OTCs' market is evolving rapidly; and there is a need to understand more about this market segment as consumers of these products. Ward and Tully (1998), as cited in Paddison and Olsen (2008) and Lyon (2001), have called for greater attention to OTC research from the consumer behaviour point of view. Kernan and Domzal (1997) have also suggested expanding the boundary of the medicines field to other disciplines such as the social sciences, as they influence the wellness of both individuals and society. Therefore, this thesis was intended to make a contribution towards further research in this area. The framework of this study was based on the Moschis and Churchill (1978) consumer socialisation framework, modified and extended to suit the current product class and population chosen.

Only a few cross-cultural studies on consumer socialisation have been undertaken to date (e.g. Rose (1999), Rose et al. (2002) and Singh et al. (2003)). However, most of these studies focused on young children and were conducted in industrialised nations, notably the US and Japan. Understanding and comparing New Zealand and Malaysia is important

to provide empirical evidence of similarities or differences between two countries with different economies, cultures and ethnic composition; countries that are not as prosperous as those utilised in the above studies. To achieve this, a survey instrument was developed and data was collected by way of classroom administration in Christchurch, New Zealand and Johor Bahru, Malaysia. A total of 509 (New Zealand n =276, Malaysia n = 233) responses were usable. Data for the two countries' settings were analysed separately and compared to discover statistical differences. Direct comparisons between cultures were conducted when appropriate.

6.2 Revisiting key findings

This study confirmed previous research findings that the use of OTCs is widespread among adolescents. The reasons for OTCs usage, although not totally similar in terms of the order of illness cited in each location, reflected similar types of usage as found elsewhere. Adolescents in this sample obtained OTCs mainly from family members, but also purchased the medicines themselves, most often from pharmacies. Friends were among the least frequently used sources for acquiring OTCs in both settings. Thus, family was an important source of OTCs information and supply, with the pharmacy as the place adolescents were most likely to visit when they want to buy the medicines themselves.

Qualitative comments revealed a preference amongst some respondents for natural healing or for a visit to a doctor. However, only 26.9% of the respondents offered their comments. Adolescents were aware that medicines are being misused and abused and felt that something should be done to promote proper behaviour.

The samples were significantly different in their backgrounds. The respondents' socioeconomic status was evenly balanced between high, moderate and low in New Zealand, but in Malaysia a high percentage of respondents came from a low socioeconomic status. The majority (90.6%) of Malaysian respondents lived with both parents compared with only slightly over half in New Zealand. A high percentage of the Malaysian sample was in the high religiosity category, while New Zealand respondents were correspondingly low.

Five objectives were developed for this study. The first objective was to examine the degree to which an adolescent's socioeconomic status, family and religious background might influence how he or she learns to be a consumer of OTCs. To test this, a series of multiple logistic regressions was performed separately for New Zealand and Malaysia. Background variables were regressed with each of the consumer socialisation process variables.

In New Zealand, only the results for television usage and communication with retail staff were significantly related to the respondent's background as measured. Results showed that television was less influential as a source of OTCs information for adolescents of moderate socioeconomic status than it was for those from a low socioeconomic group. Results also showed that living in intact families positively influenced communication with retail staff. In Malaysia, the results for three elements of the socialisation process; television usage, internet usage and communication with retail staff were significantly related to any of the background variables. Religious respondents in Malaysia were more likely to use television as an information source for OTCs. Socioeconomic status was the only predictor that contributed to the use of the internet where, as expected, it will be used

by respondents in the high socioeconomic status group. Both socioeconomic status and religiosity were important determinants for communication with retail staff. Being in the moderate socioeconomic status group and high religiosity group was associated with having less communication with retail staff. Overall, the relationship between one's family socioeconomic, family structure or religious background to what resources might shape their perspectives regarding over-the-counter medicines is rather narrow, leading to an examination as whether these background variables directly related to OTCs-related knowledge, attitudes and behaviours.

The second objective was to examine the effect of adolescents' background on OTC consumer socialisation outcomes of knowledge, attitudes and behaviours. Analyses did not reveal any significant effect between the variables in New Zealand. In Malaysia, the only effect noted was, that high religiosity was associated with higher knowledge. Thus, with the exception of the religiosity-knowledge relationship, these results led to the conclusion that, regardless of culture, New Zealand and Malaysian respondents were similar when it came to the effect, or rather lack of effect of their background on OTC consumer socialisation outcomes.

The third objective of this study was to examine the effect of the consumer socialisation process on the consumption-relevant outcomes of knowledge, attitudes and behaviours towards OTCs. In New Zealand, certain process agents influenced only knowledge and label reading. The strongest predictor for knowledge is high normative peer influence followed by concept-oriented family communication patterns but is less likely to be found in those who use radio as a source of information. In Malaysia, only reading print media

was found to predict higher knowledge. On the whole, socialisation agents did not appear to drive one's attitudes towards OTCs.

The aim of the fourth objective was to compare adolescents' consumer socialisation in New Zealand and Malaysia. Several important findings relate specifically to the socialisation process. While it was expected that, as members of a collectivist society, Malaysian parents would be more socio-oriented in their family communication patterns, results indicated the opposite. The New Zealand sample is almost evenly split in communication patterns; this was also not as expected. Results for peer influence were similar in both countries, where it was low in both normative and informative types. Media usage was significantly different, although in both locations the samples would use radio the least to gather information. The internet was the only medium that New Zealand adolescents would use more than Malaysian respondents. Somewhat surprisingly, the role of school was insignificant to such an extent that this agent was removed from further analyses. Significant differences were also noted in communication with medical personnel and retail staff between the countries, where Malaysians were more likely to have consulted with these individuals. However, overall, medical personnel were consulted more by the sample than retail staff.

It was also established that the two cultures were different in knowledge, attitudes and label reading. Malaysian respondents perceived that they have higher knowledge and read the label carefully, while New Zealand respondents had higher confidence in their attitudes towards OTCs. In neither culture were adolescents likely to recommend that the medicines should be used improperly. As presented in the discussion of objectives two and three above, more similarities than differences were found between the cultures.

As for the fifth objective, it was evident that mediation effects did not exist in either country.

These results suggest that the model can only explain a limited range of aspects of adolescents' consumer socialisation with regard to OTCs. While the consumer socialisation framework has been used to understand a wide variety of topics, it seems that customising it to OTCs does not result in a dramatic improvement in understanding. Furthermore, most studies of consumer socialisation do not utilise the larger, more comprehensive theoretical framework as the current study. Perhaps the nature of this product category also contributes to the lack of numerous significant results here.

As noted above, although the findings of this study indicated that only certain aspects of adolescents' consumer socialisation with OTCs can be explained by the model, it contributes to the existing literature in several ways. These contributions are discussed in the following sections.

6.3 Theoretical contribution

Research on OTCs has focused mainly on questions relating to medical sociology, pharmacy practice, and public policy. This study was a blend of two academic fields in that it contributed to the body of knowledge in both the pharmaceutical and consumer behaviour fields. More interestingly, it was conducted in two settings with two different cultures. It extended Moschis (1978) consumer socialisation model by adding various

concepts to the framework, based on the OTCs literature. It is hoped these theoretical contributions will enhance understanding and stimulate future research in this area.

From the consumer socialisation standpoint, religiosity has been added to the framework. While the topic of religiosity has received growing attention in consumer behaviour (Choi et al., 2010; Mokhlis, 2006; Parameshwaran and Srivastava, 2010), a very limited number of studies have investigated the role of religion or religiosity in consumer socialisation. The findings of this study highlighted the potential of religiosity as an explanatory construct in consumer socialisation in countries or cultures where religion is important such as Malaysia. For example this study shed some light on the influence of religiosity on knowledge. In the consumer behaviour field, religiosity has been used to study purchases of products such as clothing (Mokhlis, 2006a), automobiles, and microwave ovens (Delener, 1990). None of these studies, though, investigated the effect of religiosity on consumer knowledge. Outside of the consumer behaviour field, previous studies found religiosity was inversely related to knowledge about HIV/AIDS transmission (Feldman et al., 2011) and human sexuality (Stulhofer et al., 2011), while other studies found it had no significant effect (Braithwaite & Thomas, 2001; Darrington & Holt, 2004). Unlike these findings, the current study found that religiosity in Malaysia was positively related to knowledge about OTCs, which reinforces the importance of understanding religiosity in different cultural settings and potentially the behaviours related to it.

Another contribution was the religiosity measure. The religiosity scale used in this study adapted from Worthington et al. (2003) and Mokhlis (2006a), was simplified and showed a high degree of internal consistency with an alpha coefficient of 0.941. In the current study, the scale was used to measure the degree of religiosity in two different countries

with five different groups; New Zealand (mainly the non-religious and Christians), Malaysia (Buddhist, Christian, Hindu and Islam). This scale may be useful in future studies as it was neutral (not biased towards any particular religious faith).

The findings of this study have also added to our knowledge about the influence of family structure on consumer socialisation and consumer behaviour in general. Only in New Zealand was family structure related to interactions with any of the socialisation agents and then it was only with retail staff. Moschis (1987) suggested family disruption promotes adolescents' isolation from family and encourages interaction with non-familial influences, although his later work (Benmoyal-Bouzaglo & Moschis, 2009; Nguyen et al., 2009) found family disruption did not make adolescents more susceptible to other socialisation agents. Results of the current study suggest that adolescents with intact families were more likely have consulted with retail staff about OTCs as compared to those in non-intact families. Geuens, Pelsmacker and Mast (2003) found family structure had only a minor impact on the amount of parent-child communication about consumption while Noack et al. (2001) indicated that it is not the family structure that matters, but the conflict within the families, including in intact families. Morales-Suárez-Varela et al. (2009) also found that family structure was not associated with the use of OTCs. The results of this study provided similar evidence. First, it can be concluded that while family structure may impact on other risky behaviours such as smoking and using alcohol (Griesbach et al., 2003; Oman et al., 2007) it may not be so in the use of OTCs, as indicated by the results of this study and Morales-Suárez-Varela et al. (2009). Second, the effect of family dynamics might be more important than the structure itself. Clearly, future research on the effect of family dynamics on consumer socialisation is warranted.

Earlier studies in consumer socialisation examined socioeconomic status and its impact on family communication, peer influence, school and use of media. This study found socioeconomic status influenced the use of television in New Zealand, while in Malaysia it influenced the use of the internet and communication with retail staff. In New Zealand, moderate socioeconomic status reduced the influence of television as a source of OTCs information, an outcome also evident in Shim (1996). Results in Malaysia also confirmed previous studies in internet usage (Tinson et al., 2008) and communication with retail staff (Gore, 1994). The influence of the internet as a source of information was greater among high socioeconomic respondents, while retail staff were more often consulted by those of low socioeconomic status. Thus, the current findings confirm current knowledge about the effect of socioeconomic status on the use of media and communication with retail staff.

The influence of socioeconomic status, family structure and religiosity were evident, as discussed above, but overall the effects of these background variables were very marginal in both countries. This suggests an adolescent's social environment does not greatly influence socialisation processes and outcomes concerning OTCs. Including an adolescent's social environment as an influencing factor might provide a richer picture of consumer socialisation, but perhaps it also depends on the product class as previous studies have indicated that the influence of consumer socialisation may differ depending on product types (Moschis, 1987; Moschis & Moore, 1979). This is an area that could benefit from further research.

This study has confirmed and augmented our knowledge of the consumer socialisation process and its effect on outcome variables in various ways. First, school was not found to

play a role in the socialisation of OTCs. While some studies have documented the importance of school as a socialisation agent (Lachance & Legault, 2007; Yan & Xu, 2010), other researchers have failed to establish the role of the school as an agent in educating the adolescent as consumer (Churchill & Moschis, 1979; Moschis & Churchill, 1978; Moschis & Churchill, 1979). This finding suggests that schools may educate adolescents on certain aspects of the consumer experience but that their contribution needs to be improved.

Mangleburg and Bristol (1998) found that informational peer influence was related to marketplace knowledge. However, this study found that in New Zealand it was normative influence that related to knowledge. While this result is also inconsistent with findings in scepticism towards advertising (Mangleburg & Bristol, 1998) and shopping attitudes (Mangleburg et al., 2004) (in those studies the effect of informational peer influence was greater than normative peer influence), it suggests that both informational peer influence and normative peer influence are related to knowledge. Reading print media was related to carefully reading the label in New Zealand and higher knowledge about OTCs in Malaysia, while less radio usage was related to more knowledge. All these findings were consistent with previous studies relating to media in consumer socialisation (Ferle et al., 2000; Mehta & Keng, 1985; Shim, 1996) and OTCs studies (Hughes et al., 2002).

Another theoretical contribution of this study comes from its attention to cultural factors. The use of media to locate information about OTCs was significantly different between the two samples. The use of the internet was the only medium that respondents in New Zealand would use to a substantial degree while in Malaysia respondents indicated that they would use a wider variety of media. For example, the use of television was high

among Malaysian respondents, which confirms our current knowledge that television is an important medium in collectivist and high power distance societies (de Mooij, 2010; Hofstede, 2001). Results in Malaysia also verified Sabri and Masud's (2005) study in the use of television, print media and the internet. The finding in New Zealand confirmed Comrie et al. (2007) regarding the use of the internet and newspaper reading. As well as the differences found in media usage, perceived knowledge about OTCs, attitudes and how carefully the respondents read the label also differed between the cultures.

While these findings suggest that there are variations between the samples, overall, results for objectives one, two, three and five were almost identical in both countries. Another finding concerns the concept-oriented and socio-oriented communication patterns within individualistic and collectivist societies. Whilst Rose et al. (1998) and Rose (1999) found that a collectivist society might be more socio-oriented and an individualistic society might be more concept-oriented, the current study found different results. This study also found that peer influence was almost identical in both cultures. While no study in consumer socialisation has investigated cross-cultural differences in terms of susceptibility to normative or informational peer influence, the cross-cultural consumer behaviour literature suggests that differences between nations should be present (Hofstede, 1980; Singh et al., 2003). One would expect collectivist societies to be more susceptible to social influence in that they emphasize harmony and conflict avoidance. The maintenance of the harmony imperative suggests that people would conform to what their peers thought (normative peer influence) or actively consider other people's opinions (informational peer influence) (Kongsompong, Green, & Patterson, 2009). These behaviours signify a collectivist society and thus Malaysian respondents should be high in normative and informational peer influence. They were not in the present study. Perhaps the

contradictory findings in family communication and peer influence were due to the fact that Hofstede's (1980) indices of culture were based on data collected in the 1970s and the elements of culture that lead to the development of Hofstede's dimensions are likely to have evolved. There have very clearly been cultural shifts since then, if only because of the enormous changes brought about by the worldwide web. Differences may also be due to the fact that this sample consisted of adolescents and Hofstede's study was based on adults. The present study has therefore provided insights into the impact of cultural differences on adolescents and suggested that these can be different from those on adults. It is also possible that, by virtue of being teenagers, the respondents were similar regardless of culture, suggesting that a global culture may determine how teenagers communicate with their families or how open they may be to peer influence. Certainly the results of this study suggest that the New Zealand and Malaysian adolescents in this sample here were rather similar.

6.4 Practical implications

This study adds to the limited knowledge about adolescents' OTCs use, especially in New Zealand and Malaysia. The results of this study confirmed the findings of previous studies that the use of OTCs among adolescents is widespread (Dengler & Roberts, 1996; Morales-Suarez-Varela, 2009; Stasio et al., 2008). This highlights the importance of educating young people to be rational consumers.

A number of managerial and policy implications are evident from these findings. In some cases, the recommendations may be relevant for both countries and in other cases the findings may be limited to just one. Given that the study was carried out with samples that

were not fully representative of their nations, any recommendations must take this into consideration and also other limitations of the study, which are fully presented below.

6.4.1 Policymakers

The results of this study showed that self-medication with OTCs was widespread among the respondents. This study also showed that schools did not play an important role in educating the survey respondents about OTCs. The insignificant role of school in educating these adolescents about OTCs should be of great concern and necessary remedial steps should be taken. This may include incorporating information about OTCs into health education classes or inviting speakers to talk about OTCs.

Besides school, comprehensive communication campaigns and educational programmes should be designed using carefully selected media. Public policy officials should choose media that are popular with adolescents to ensure they have an enhanced likelihood of reaching young people. Reading printed media is a predictor of label reading in New Zealand and knowledge in Malaysia. Descriptive statistics showed 27.5% and 60.9% of adolescents in New Zealand and Malaysia respectively will read printed media to get information about OTCs. This suggests communication campaigns about OTCs can be delivered through this media, more so in Malaysia. Magazines that target teenagers would be a good medium to achieve this.

Though not predictive of knowledge, attitudes or behaviours, in either country, descriptive analysis showed the internet was a popular medium among adolescents for obtaining information about OTCs. As such, it would be a useful mechanism for the provision of information to this generation. The internet-based resources should be interactive, to help

adolescents make knowledgeable decisions and discourage the formation of inappropriate behaviour with OTCs. This suggestion aligns with Hyunjae, Hye-Jin, and Bumjun's (2008) finding that the internet is a major medium for promoting health behaviour. Another popular medium among adolescents in both countries is television. Advertisements showing preventive measures or warnings similar to those for tobacco and alcohol should be considered. These messages may be aired during commercial breaks in adolescent- targeted TV programmes. To ensure effectiveness, the content of these advertisements/ programmes should be attractive and factual in conveying messages to adolescents.

It appears from this study that communication with parents and normative peer influence are predictors of knowledge in New Zealand, where a concept-oriented style of family communication results in the desired outcomes (perceived better knowledge). This confirms that two-way communication between parents and adolescents, has beneficial outcomes, and supports the findings of Palan (1998). On this basis, education programmes and public service campaigns should be directed not only at adolescents, but also at parents, so that positive and effective communication can occur between them. Thus, communication programmes should be designed to encourage parents to discuss OTCs use with their teenage children. A similar approach should be taken to adolescent peer groups.

Overall, government officials in regulatory and consumer agencies concerned with preparing young people to be sensible OTC consumers should be aware that adolescents in various segments of society may differ in their acquisition of certain consumer skills relevant to OTCs.

Governments and NGOs in both New Zealand and Malaysia have launched numerous initiatives to address various issues involving adolescents. For example, in Malaysia, recognising the seriousness of social problems among youth such as loitering, gang membership, violence, bullying and substance abuse, has lead government agencies and NGOs to implement various preventive programmes. Programmes such as *Program Rakan Muda* and *Program Latihan Khidmat Negara*, for example, were developed to emphasise character building and promote positive values among adolescents. These and similar programmes should include topics such as OTC-related actions and uses.

6.4.2 Marketers

The findings of this study provide valuable information regarding the effect of family communication and knowledge. The study found that, in New Zealand concept-oriented family communication is vital in developing adolescents' knowledge of OTCs, possibly encouraging desired behaviours. Marketers could design advertising messages that show family activities directed at children from concept-oriented families. Advertisements that portray parents discussing future purchases with their children can be designed and broadcast. Others may include images or messages that stress family togetherness or the importance of bringing out and including children's opinions in family purchase decisions.

Knowing where adolescents obtain their OTCs and the agents relevant to the OTCs' socialisation process can assist marketers in developing appropriate information and sales strategies. For example, this study showed that radio was not an important socialisation agent in either culture. Marketers should therefore direct their marketing efforts towards other media or socialisation agents that have greater influence. It is also evident in this

study that New Zealand and Malaysian adolescents are distinct in their use of media; therefore a different marketing channel for promotion purposes is appropriate. While in New Zealand, the internet would be likely to be the best medium, in Malaysia marketers should use television.

Overall, the findings from this study may help marketers understand the influential variables to be considered when attempting to target teenagers in the sale of OTCs. Such an in-depth understanding is, indeed, important to better understand adolescents both as a current market and as the future generations of consumers. Because medicines can potentially either harm or improve health (Norris et al., 2005), promotions of OTCs may raise ethical issues and marketers should be aware of this when designing their marketing strategies.

6.5 Limitations of the study

This study has several limitations that need to be acknowledged when assessing the findings and their implications. The first issue is the generalisability of the results. The sample consisted of high school students in two major cities in New Zealand and Malaysia, which may not be representative of the entire populations in the respective countries. However, the limit of just one city to represent each country was necessary for the very practical reasons of financial and time constraints. A larger sample from different regions of both countries would have provided more generalisable results. In spite of this, the sample appeared to at least represent the ethnic compositions of the population in each country. Another concern was that the data were collected in Malaysia and New Zealand in order to represent the eastern and western cultures. However, there are many countries

in the east and west whose consumers might have different perspectives from those in New Zealand and Malaysia. Under these conditions, generalisation of findings may not be appropriate.

A second limitation was one of measurement. The scales were developed in one culture (New Zealand) and were applied in another nation. Although every effort was made to assess the applicability of the concepts and measures in each culture, and careful and thorough translation protocols were conducted, adolescents in New Zealand and Malaysia might have responded to the scales in different ways. A further limitation regarding measurement arose from research constraints and affected the scales for family communication and peer influence, in particular. In order to control the length of time necessary to complete the questionnaire and to lend balance with regard to its difficulty, some scales were changed from more complicated ones to simpler ones. For example, the scales for family communication patterns, previously employed by researchers such as Mangleburg and Bristol (1998) and Moschis et al. (1984), were changed from a 5-point Likert scale to a "yes" or "no" dichotomy. Similarly, the scale developed by Bearden et al. (1989), and later used by Mangleburg and Bristol (1998) to measure susceptibility to peer influence, was also changed. Although the change of the scale allows the objectives of the study to be achieved, as reported in the last chapter, a sound comparison with these previous studies might be difficult as a consequence. Further, changing the scales limited the analyses to non-parametric testing only.

A further limitation was that since respondents completed the survey during class time, there was a possibility of insincere responses due to lack of interest, boredom or scepticism. The limited time given to students may have resulted in the student just

wanting to complete the questionnaire as quickly as possible, thereby sacrificing sincerity. Thus, some of their responses might not have revealed their thoughts accurately. Moreover, the use of some terms might have confused the students. For example, OTCs were defined generally, and drugs were not specifically referred to by brand names. Although every effort was made to ensure all respondents had the same definition of OTCs, there might be some who interpreted these definitions differently. Although the researcher was present during the administration of the questionnaire to explain potentially confusing terminology, some students may have been too embarrassed to ask for clarification. Concern also existed about the nature of some of the subject matter being studied (improper use of OTCs). Socially desirable response bias might also have influenced some of the respondents, even though they were encouraged to be honest with their answers. In addition, though the cover letter of the questionnaire noted that their responses would remain anonymous, and they were assured there were no right or wrong answers, some respondents might still have been concerned that their responses posed a risk to them.

Another limitation concerns the measure for proper and improper use of OTCs. These behaviours were thought to be potentially sensitive for respondents. Therefore, a third person technique, phrased as if it were referring to other people's behaviours, as suggested by Malhotra et al., (2002) was used. Although this technique may not have accurately depicted the true beliefs and intentions of the respondents in every instance, it still enabled the researcher to gather at least suggestive information on perceptions of proper and improper behaviours.

Some of the following suggestions may address the various limitations discussed above.

6.6 Recommendation for future research

Future research should continue to investigate potential relationships between culture and consumer socialisation in order to identify more specific relationships between them. In the study of consumer socialisation, almost all researchers have used Hofstede's conceptualisation to explain differences between cultures; a similar measure was used here. As some findings of this study suggest, Hofstede's dimensions of national culture do not explain fully the differences between cultures. Other cultural models in addition to Hofstede could be used in the future.

The items for knowledge did not directly measure adolescents' actual knowledge of OTCs. For future research, a quiz about OTCs could be used to measure adolescents' knowledge more accurately. Adolescents may believe that they know about OTCs, when, in reality, they do not. The measurement of product knowledge will be likely to require the use of brand names, which may confound the measure whilst simultaneously providing a real-world example that presumably all respondents would recognise. Similarly, behaviours which were measured using the scenario-based questionnaire did not directly measure an adolescent's behaviours toward OTCs. Asking respondents the dosage they normally take when sick could directly measure their proper or improper behaviours and could possibly be used in future research.

Future research may also investigate the effect of family dynamics on adolescents' socialisation as recent studies have found family structure to have almost no impact on their socialisation. This issue would benefit from further investigation. Given the

importance of understanding religiosity in different settings or cultures, adding religiosity in future consumer socialisation research should be considered.

It may also be useful to replicate this study using Likert scales, as previously employed by Mangleburg and Bristol (1998) and Moschis et al. (1984), for family communication patterns, and by Bearden et al. (1989) and Mangleburg and Bristol (1998) for peer influence. Using Likert scales would allow the study to be analysed using parametric tests. Replication of this study using samples from other countries or other healthcare products such as nutraceutical (Dana & Paulin, 2008) would also be a meaningful avenue for future research.

In terms of OTCs, it may be beneficial for future research to focus on specific types of medicines such as cough or headache remedies, rather than OTCs in general. By doing so, respondents may have similar definitions of these products and have similar interpretations of why, how and when OTCs can be used.

6.7 Chapter summary and concluding comments

In general pharmaceutical marketers and academic researchers should note that this study is important not only because adolescents are currently consumers of OTCs, but because as this younger population group begins to age, they become a stronger customer base for a wide range of pharmaceutical products. Adolescent consumption habits may be perpetuated into adulthood, demonstrating brand loyalty and enhancing brand equity as a result. In addition, these preferences would likely be socialised into preferences in the following generations, further enhancing loyalty and brand equity.

While some differences were noted, overall the results of the study suggest that New Zealand and Malaysian respondents are rather similar. Levitt (1983) argued that new technology would lead to homogenisation of consumer wants and needs. The global teenager hypothesis, where there is increasing similarity among teens from different countries and backgrounds (Anderson & He, 1998) might also be true. There may be more cultural similarities than differences, with this convergence continuing to occur. Urbanisation and increasing exposure to modern mass media (Triandis et al., 1993) in Malaysia, might contribute to a shift in the collectivist society, and therefore to a narrowing of the gap between New Zealand and Malaysian respondents.

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Appendix 1

Questionnaire (English version)

Information sheet

Dear student,

You are invited to participate in a project to investigate how adolescents acquire knowledge, attitudes and behaviours relevant to over-the-counter medicine, which is part of my doctoral research. Filling out the questionnaire is completely voluntary and you may choose not to do so. However, I would encourage you to try it out because the questions are interesting and it should be fun to do.

Your participation in this project will involve completing a series of questions and scales. The entire task will take approximately 20 minutes. There are no right and wrong answers to any of the questions and there will be no (moral or legal) judgement of any of your responses to the questionnaire items.

Results may be published and used for academic, marketing strategy and policy development purposes, but you may be assured of the complete confidentiality of data gathered. To ensure anonymity and confidentiality the following steps will be taken:

- Your desk will be separated from the other students around you.
- Please **do not** put your names on the questionnaire. The questionnaire will be collected, facing down in the collection box.
- Participants' responses **will not** be analysed individually and instead will be combined together for data analyses (it will impossible to link an individual with his or her questionnaire).

This project is being carried out by Suriani Abdul Hamid. She will be pleased to discuss any concerns you have about participation in the project. She can be contacted by email on abdulhas@lincoln.ac.nz or call her at (643) 325-3838 extension 8340. This project is supervised by Dr. David A. Cohen and Dr. Valerie Manna. Dr. David A. Cohen can be contacted via email at cohend@lincoln.ac.nz or call at (643) 325-3838 extension 8320 and Dr. Valerie Manna can be contacted at email mannav@lincoln.ac.nz or call at (643) 325-3838 extension 8062

This project has been reviewed and approved by Lincoln University Human Ethics Committee.
I hope you find the experience interesting.

Thank you very much for your participation. Without your help, academic research would be impossible.

Lincoln University
Te Whare Wānaka o Aoraki

Section A

First, we would like to know about your individual and social background.
Please tick the appropriate box.

1. Your age? _____ years old

2. Your gender? Male [ ] Female [ ]

3. You are……..

☐ European	☐ Maori	☐ Other (Please specify)
☐ Pacific Islander	☐ Asian	_____

4. How much money do you spend per week? NZD _____

5. Who do you live with?

☐ Mother and father	☐ Mother only	☐ Father only
☐ Mother and other relatives	☐ Father and other relatives	☐ Grandparents
☐ Others (please specify) _____		

6. What is your father's level of education?

☐ Some high school or less	☐ Completed high school	☐ Tertiary certificate or diploma
☐ Bachelor degree	☐ Master's/PhD	

7. What is your mother's level of education?

☐ Some high school or less	☐ Completed high school	☐ Tertiary certificate or diploma
☐ Bachelor degree	☐ Master's/PhD	

8. Father's job (please print clearly):_____

9. Mother's job (please print clearly):_____

10. What is your religion?

☐ Christianity	☐ Judaism	☐ Islam
☐ Buddhism	☐ No religion	☐ Other (Please specify)
		_____

11. Regardless of your religious beliefs, please circle the number on the scales that best represent your behaviour and feelings for each of the following items.

a. I spend time in private religious thought and prayer
Never 0 1 2 3 4 5 Every day

b. Religion guides my daily behaviour
Not at all true of me 0 1 2 3 4 5 Totally true of me

c. I enjoy participating in the activities of my religious organization
Not at all true of me 0 1 2 3 4 5 Totally true of me

d. I want to understand every detail behind the ideas in my religion/holy books
Not at all true of me 0 1 2 3 4 5 Totally true of me

e. I engage in public worship with others
Not at all true of me 0 1 2 3 4 5 Totally true of me

Over-the-counter (OTC) medicines/drugs are those that can be purchased without a doctor's prescription. These products can be purchased from supermarkets and pharmacies. There are many types of OTCs, for example, Lemsip® for cold and flu, Strepsils® for sore throat and Panadol® or paracetamol for headache and fever.

12. Have you ever **used** any of these sorts of medicines? Yes [ ] No [ ] Go to question **18**

13. Why did you take these medicines? Tick all that apply.

☐	Allergies/hay fever	☐	Cold and flu	☐	Cough
☐	Fever	☐	Headache	☐	Menstrual pain
☐	Mouth ulcer	☐	Muscle pain	☐	Stomachache
☐	Sore throat	☐	Sleeping aids	☐	Others (please specify) _____

14. Where do you most often purchase OTC medicines? Tick all that apply

☐	Never purchased myself Go to question **15**	☐	Pharmacies	☐	Supermarket e.g. Countdown
		☐	Convenience stores/ dairy	☐	Others (please specify)

_____

15. If you have taken OTC medicines but not purchased any yourself, where do you obtain them?

☐ Given by friends ☐ Given by family members ☐ Others (please specify) _____

16. Do you read the label for information about the product? Yes [ ] No [ ] Go to question **18**

17. How carefully do you read the label?

Brief scan 0 1 2 3 4 5 Every word

18. In general, how would you describe your health? Please circle.

Poor 0 1 2 3 4 5 6 7 8 9 10 Excellent

19. Over the past 12 months, how many times have you been ill? Please circle.

0	**1**	**2**	**3**	**4**	**5**
Never	Once	Twice	3 times	4 times	5 times or more

Section B

For the items following, please tick the appropriate box.

1. Interactions with family. ***Family refers to your parents or guardian whom you live with.***

		Yes	**No**
a	My family is open to my suggestions about things to buy.		
b	I have asked my family opinion if I am not sure about an OTC medicine.		
c	My family says I shouldn't buy OTC medicines for myself		
d	My family says there are some things that shouldn't be talked about		
e	If I asked about OTCs my family is likely to say "let's ask the pharmacist or doctor" .		
f	My family and I have discussed the benefits of OTC medicines		
g	My family and I have discussed possible negative effects of OTC medicines		
h	My family and I have discussed misuse and abuse of OTC medicines		

2. Interactions with peers. ***Peers refers to your best friend, other friends, classmates and others of your age that you know***

		Yes	**No**
a	Peer approval of my purchases is important to me.		
b	My peers tell me information about OTC medicines.		
c	My peers tell me what OTC medicines they are taking.		
d	If I don't have experience with an OTC medicine, I would ask my peers about it.		
e	I talk much more about OTC medicines with my peers than with my parents		
f	Sometimes I borrow an OTC from my peers (e.g. Panadol®).		
g	I would buy an OTC based on my peer recommendation		
h	My peers have told me how to misuse OTC.		

3. Interactions with media and Internet

a. If I wanted information about OTCs, I would go to……. (tick all that apply)

☐	TV advertisement	☐	Radio advertisement	☐	Newspaper advertisement
☐	TV news	☐	Radio news	☐	Newspaper news
☐	Magazine advertisement	☐	Articles in magazine	☐	Internet
☐	TV programs about health/medicine			☐	Others (please specify) _____

b. I access the internet at ….. (tick all that apply)

☐	Home	☐	School	☐	Others (please specify) _____
☐	Friend's computer	☐	Cybercafe	☐	I don't have access. Proceed to **No. 4**

c. How much time per day do you spent on the internet?

Personal		hours	Homework		hours

4. If you wanted to get information about OTC, what information do you look for?

_____

_____

_____

5. School

		Yes	No
a	The topic of OTC medicines is taught in one of the subjects in school		
b	I remember seeing information about OTC medicines somewhere in school.		
c	We had a speaker invited to talk about OTCs in school.		
d	My teacher has talked about illegal drugs but not legal drugs.		

6. Communication with others.

a. I have asked these people's opinion if I am not sure about an OTC medicine.

☐	Medical doctor	☐	Pharmacist	☐	Nurse
☐	Salesperson	☐	Never have asked anybody Proceed to **Section C**	☐	Others (please specify) _____

b. If you have asked, do you remember anything about the type of information given by them (tick all that apply)

☐	When to take the medicine	☐	How much to take	☐	Benefits
☐	Side effects	☐	What type of brand is good	☐	Which OTC is right for me
☐	How much it cost	☐	How to take the medicine (e.g. with food or empty stomach)		
☐	Other (please specify) _____				

Section C

1. How would you rate your knowledge about the following?

		No knowledge at all				A great deal of knowledge
a	Which places sell OTCs	1	2	3	4	5
b	If the price of an OTC is reasonable.	1	2	3	4	5
c	The different brands of OTCs	1	2	3	4	5
d	The terms used on OTCs labels	1	2	3	4	5
e	How OTCs work	1	2	3	4	5
f	Negative effects and risks of OTCs	1	2	3	4	5
g	Benefits of OTCs	1	2	3	4	5

2. Your attitude about **OTCs only.**

		Strongly agree				Strongly disagree
a	OTCs are safe because they are sold without prescription	1	2	3	4	5
b	OTCs are safe for use because they are easy to get.	1	2	3	4	5
c	Except for serious illness, I prefer to heal myself with OTC medicines than to see doctor	1	2	3	4	5
d	Since OTCs are taken without a prescription, it is very important to know all about them.	1	2	3	4	5
e.	OTCs do not usually have serious effects	1	2	3	4	5

3. Your attitude about medicines in general **(both prescription and OTCs).**

		Strongly agree				**Strongly disagree**
a	I prefer natural remedies	1	2	3	4	5
b	I use medicine as last resort.	1	2	3	4	5
c	Medicines do make me feel better when I am ill	1	2	3	4	5
d	Misuse and abuse of medicines is a problem in a society	1	2	3	4	5
e	Prescription medicines work better than OTCs	1	2	3	4	5
f	Young people are more likely to misuse medicines than adults.	1	2	3	4	5
g	Sometimes I take a medicine when I don't really need to.	1	2	3	4	5

Section D

You will find four different scenarios in this section. Please answer each question by circling your response. Remember your answers will be completely anonymous and confidential.

1. One night John is having a severe headache. He goes to the medicine cabinet and finds a packet of medicine which has the following instructions:

> *Use for fever, headache, muscle aches, cold and flu.*
> *Take 2 pills every 4 to 6 hours.*

He takes 2 pills every 4 hours that night. However, when he wakes up the next morning, the pain is still there. If you were John, how are you going to handle this situation?

	Not at all likely				**Very likely**
I will take 2 pills but in less than 4 hours	1	2	3	4	5
I will take more than 2 pills every 4 hours	1	2	3	4	5
I will strictly follow the instructions even though I still have the pain.	1	2	3	4	5
If you don't follow the instruction on the label, how likely would you tell a friend?	1	2	3	4	5

2. Zack finds this information in a pharmacy brochure

> This product contains fatty acids known to play a vital role in the development of learning ability, memory, co-ordination and mental clarity for children and adults. Take 1 tablet a day. You should feel the effects after about two weeks

Zack is about to sit for an important exam next month and really hopes to get an excellent result. What would you advise Zack to do?

	Not at all likely				**Very likely**
Take 1 tablet a day as instructed even though after 2 weeks he doesn't notice any change in his abilities	1	2	3	4	5
Take 2 tablets or more a day because 2 tablets will work better than 1.	1	2	3	4	5
Combines with something else like herbs so it will work better	1	2	3	4	5
How likely would he be to search for more information?	1	2	3	4	5

3. Jane has weight problem and was very concerned about it. One day, she came across an advertisement about a medicine used to remove body toxins. Although it wasn't on the label, she thought this OTC medicine might be effective in reducing her weight.

	Not at all likely				**Very likely**
If you were Jane, will you try the medicine with the hope that it can reduce your weight?	1	2	3	4	5
How likely is Jane to suffer side-effects if she's taking the medicine for weight loss?	1	2	3	4	5
If she doesn't follow the instruction on the label, how likely would she tell a friend?	1	2	3	4	5
How likely would she be to search for more information?	1	2	3	4	5

4. Danny goes to a friend's house to watch a World Cup game with him. The games are being hosted in another country and will be live telecast at 1 am in New Zealand. Danny really wants to watch but feels very sleepy. His friend offers twice the usual dose of a medicine that can help him stay awake the whole night. The label noted that certain people may be at risk of having an upset stomach.

	Not at all likely				**Very likely**
If you were Danny, how likely are you going to accept the offer?	1	2	3	4	5
How likely is Danny to suffer side-effects of the medicine the next day?	1	2	3	4	5
If he doesn't follow the instruction on the label, how likely would he tell a friend?	1	2	3	4	5

We are interested in any other thoughts, observation or opinions you may have about young people and over-the-counter medicines. Please feel free to use this space to make any comment that comes to mind.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Thank you for your time with this questionnaire, your help is very much appreciated.

Appendix 2

Questionnaire (Bahasa Malaysia version)

Kepada pelajar,

Anda dijemput untuk mengambil bahagian dalam satu projek untuk mengkaji bagaimana remaja memperolehi pengetahuan, sikap dan kelakuan berkenaan ubat-ubat di atas kaunter. Penglibatan anda dalam projek ini adalah secara sukarela dan anda boleh memilih untuk tidak berbuat demikian. Walau bagaimanapun, saya galakkan anda untuk mengambil bahagian dan cuba menjawab soal selidik yang disertakan kerana ia sangat menarik untuk dijawab.

Penglibatan anda dalam projek ini memerlukan anda melengkapkan satu set soalselidik yang akan mengambil masa lebih kurang 20 minit. Tidak ada jawapan yang betul atau salah pada mana-mana soalan dan tiada penilaian moral atau perundangan dibuat berdasarkan jawapan yang yang anda berikan.

Keputusan yang diperolehi dari projek ini berkemungkinan akan diterbitkan dan digunakan untuk tujuan akademik, strategi pemasaran dan merekabentuk polisi tetapi semua data yang dikumpul dijamin sulit sepenuhnya. Bagi memastikan data yang dikutip adalah sulit sepenuhnya dan setiap individu tidak boleh dikesan langah-langkah berikut akan diambil:

- Meja anda akan diasingkan daripada rakan-rakan lain.
- Anda **dilarang menulis nama** anda pada kertas soalan. Soalan akan dikutip secara rawak dan diterbalikkan dalam kotak pungutan.
- Jawapan setiap pelajar yang terlibat **tidak** akan dianalisa secara individu dan sebaliknya akan dikumpulkan kesemuanya untuk tujuan penganalisaan data (oleh itu adalah mustahil untuk mengaitkan seseorang individu dengan jawapan yang diberikan)

Projek ini dijalankan oleh Suriani Abdul Hamid. Beliau berbesar hati untuk berbincang sebarang keperhatinan anda berkenaan penglibatan dalam projek ini. Beliau boleh dihubungi melalui e-mail abdulhas@lincoln.ac.nz atau telefon 013-2712664. Projek ini diselia oleh Dr. David A. Cohen dan Dr. Valerie Manna. Dr. David A. Cohen boleh dihubungi melalui email cohend@lincoln.ac.nz atau telefon (643) 325-3838 sambungan 8320 dan Dr. Valerie Manna boleh dihubungi melalui email mannav@lincoln.ac.nz atau telefon (643) 325-3838 sambungan 8062

Projek ini telah disemak dan diluluskan oleh Jawatankuasa Etika Kemanusiaan Lincoln University.

Bahagian A

Pertama, kami ingin tahu latarbelakang individu dan sosial anda.
Sila tandakan "X" pada kotak yang berkenaan.

1. Umur anda? _____ tahun

2. Jantina anda? Lelaki [ ] Perempuan [ ]

3. Anda seorang……..

[ ] Melayu [ ] Cina [ ] India
[ ] Lain-lain (Sila nyatakan) _____

4. Berapakan duit poket yang anda belanjakan setiap minggu? RM _____

5. Dengan siapakah anda tinggal

[ ] Ibu dan bapa [ ] Ibu sahaja [ ] Bapa sahaja
[ ] Ibu dan saudara mara [ ] Bapa dan saudara mara [ ] Datuk dan nenek
[ ] Lain-lain (Sila nyatakan) _____

6. Apakah tahap pendidikan bapa anda?

[ ] Tamat sekolah rendah [ ] Tamat sekolah menengah [ ] Diploma
[ ] Ijazah [ ] Sarjana

7. Apakah tahap pendidikan ibu anda?

[ ] Tamat sekolah rendah [ ] Tamat sekolah menengah [ ] Diploma
[ ] Ijazah [ ] Sarjana

8. Pekerjaan bapa (sila nyatakan):
_____

9. Pekerjaan ibu (sila nyatakan)
:_____

10. Apakah agama anda?

[ ] Islam [ ] Budha [ ] Hindu
[ ] Kristian [ ] Tiada agama [ ] Lain-lain (Sila nyatakan)

_____

11. Tanpa mengira pegangan agama anda, sila bulatkan nombor pada skala di bawah yang menggambarkan kelakuan dan perasaan anda terhadap setiap kenyataan yang diberikan.

a. Saya meluangkan masa untuk sembahyang dan beribadat
Tidak pernah 0 1 2 3 4 5 Setiap hari

b. Agama menjadi pedoman hidup harian saya
Sangat tidak benar tentang saya 0 1 2 3 4 5 Sangat benar tentang saya

c.Saya merasa seronok terlibat dalam aktiviti-aktiviti keagamaan
Sangat tidak benar tentang saya 0 1 2 3 4 5 Sangat benar tentang saya

d. Saya ingin mengetahui setiap perincian disebalik ajaran agama/ kitab suci agama saya
Sangat tidak benar tentang saya 0 1 2 3 4 5 Sangat benar tentang saya

e.Saya sembahyang/beribadat secara berkumpulan
Sangat tidak benar tentang saya 0 1 2 3 4 5 Sangat benar tentang saya

UBAT DI ATAS KAUNTER (OTC) merupakan ubat yang boleh dibeli tanpa priskripsi (arahan bertulis) doktor. Ubat-ubat ini boleh dibeli di kedai runcit dan farmasi. Terdapat pelbagai jenis ubat OTC, seperti, Breacol® untuk batuk, Strepsils® untuk sakit tekak dan Panadol® atau paracetamol untuk sakit kepala dan demam.

12. Pernahkan anda **menggunakan** apa-apa jenis ubat OTC? Ya [ ] Tidak [ ] Terus ke **soalan 18.**

13. Kenapa anda mengambil ubat-ubat ini? Tandakan "X" pada semua yang berkenaan. Anda boleh tandakan lebih daripada satu.

☐	Alahan	☐	Demam selsema	☐	Batuk
☐	Demam	☐	Sakit kepala	☐	Senggugut
☐	Ulser mulut	☐	Sakit otot	☐	Sakit perut
☐	Sakit tekak	☐	Masalah tidur	☐	Lain-lain (Sila nyatakan) _____

14. Dimanakah anda biasa membeli ubat-ubat OTC? Tandakan "X" semua yang berkenaan.. Anda boleh tandakan lebih daripada satu.

☐	Tidak pernah beli sendiri Terus ke soalan **15**	☐	Farmasi	☐	Pasaraya
		☐	Kedai runcit	☐	Lain-lain (sila nyatakan) _____

15. Sekiranya anda pernah menggunakan ubat OTC, tetapi tidak pernah membelinya sendiri, dari manakah anda perolehi ubat tersebut?

☐ Diberi oleh kawan ☐ Diberi oleh ahli keluarga ☐ Lain-lain (sila nyatakan)_____

16. Adakah anda membaca label untuk mendapatkan maklumat berkenaan ubat berkenaan?
Ya [ ] Tidak [ ] Terus ke **soalan 18.**

17. Bagaimana telitikah anda membaca label tersebut?
Secara ringkas 0 1 2 3 4 5 Sangat teliti

18. Secara keseluruhan, bagaimanakah anda nyatakan tahap kesihatan anda? Sila bulatkan.
Tidak sihat 0 1 2 3 4 5 6 7 8 9 10 Sangat sihat

17. Dalam masa 12 bulan yang lepas, berapa kali anda sakit? Sila bulatkan.

0	**1**	**2**	**3**	**4**	**5**
Tidak pernah	Sekali	2 kali	3 kali	4 kali	5 kali atau lebih

Bahagian B

Bagi setiap kenyataan di bawah, sila tandakan "X" pada kotak yang berkenaan.

1. Interaksi dengan keluarga. Keluarga merujuk kepada ibubapa atau penjaga dimana anda tinggal bersama.

		Ya	**Tidak**
a	Keluarga saya bersikap terbuka dengan cadangan saya tentang barang-barang yang hendak dibeli		
b	Saya ada bertanya pandangan keluarga sekiranya saya tidak pasti tentang sesuatu ubat OTC.		
c	Keluarga saya berkata saya tidak boleh membeli ubat OTC untuk diri saya sendiri.		
d	Keluarga saya berkata ada sesetengah perkara tidak boleh dibincangkan.		
e	Bila saya bertanya tentang ubat OTC, keluarga saya berkata "mari kita tanya pada ahli farmasi atau doktor".		
f	Keluarga saya & saya ada berbincang tentang kebaikan ubat-ubat OTC.		
g	Keluarga saya & saya ada berbincang tentang kesan negatif ubat-ubat OTC.		
h	Keluarga saya & saya ada berbincang tentang kesilapan penggunaan dan penyalahgunaan ubat-ubat OTC.		

2. Interaksi dengan kawan. Kawan merujuk kepada rakan baik, rakan-rakan lain, rakan sekelas dan lain-lain orang yang sebaya dengan anda.

		Ya	Tidak
a	Persetujuan kawan-kawan tentang barang yang saya beli sangat penting bagi saya		
b	Kawan saya memberitahu saya maklumat berkenaan ubat-ubat OTC.		
c	Kawan saya memberitahu saya berkenaan ubat OTC yang mereka ambil		
d	Sekiranya saya tidak mempunyai pengalaman dengan ubat OTC, saya akan bertanya pada kawan saya.		
e	Saya lebih banyak berbincang tentang ubat-ubat OTC dengan kawan-kawan berbanding ibubapa saya		
f	Kadangkala saya pinjam ubat OTC daripada kawan (contohnya Panadol®)		
g	Saya akan mengambil ubat OTC yang sama yang diambil oleh kawan saya		
h	Kawan-kawan memberitahu saya bagaimana untuk berseronok dengan ubat OTC		

3. Interaksi dengan media dan intenet

a. Sekiranya saya mahu maklumat tentang ubat OTC, saya akan cari melalui……. (sila tandakan "X" pada semua yang berkenaan). Anda boleh tandakan lebih daripada satu.

☐	Iklan di televisyen	☐	Iklan di Radio	☐	Iklan di suratkhabar
☐	Berita di televisyen	☐	Berita di radio	☐	Berita di suratkhabar
☐	Iklan di majalah	☐	Artikel di majalah	☐	Intenet
☐	Program televisyen berkenaan kesihatan/ubat-ubatan			☐	Lain-lain (sila nyatakan) _____

b. Saya mendapat akses internet di …….. (sila tandakan "X" pada semua yang berkenaan). Anda boleh tandakan lebih daripada satu.

☐	Rumah	☐	Sekolah	☐	Lan-lain (sila nyatakan) _____
☐	Komputer rakan	☐	Cybercafe	☐	Saya tidak ada akses. Terus ke **No. 4**

c.Dalam sehari, berapa lamakah anda meluangkan masa untuk melayari intenet?

Peribadi		jam	Kerjarumah		jam

4. Sekiranya anda ingin mendapatkan maklumat tentang ubat OTC, maklumat apakah yang anda cari?

_____
_____
_____
_____

5. Sekolah

		Ya	Tidak
a	Topik berkenaan ubat-ubat OTC diajar dalam salah satu matapelajaran di sekolah.		
b	Saya pernah melihat maklumat tentang ubat-ubat OTC di dalam kawasan sekolah		
c	Pihak sekolah ada menjemput penceramah untuk menerangkan tentang ubat-ubat OTC di sekolah.		
d	Guru saya ada bercakap tentang dadah yang diharamkan tetapi tidak tentang dadah yang dibenarkan.		

5. Komunikasi dengan pihak lain.

a. Saya ada bertanya pendapat daripada orang berikut sekiranya saya tidak pasti tentang ubat-ubat OTC. Sila tandakan "X" pada semua yang berkenaan. Anda boleh tandakan lebih dari satu jawapan.

☐	Doktor perubatan	☐	Ahli farmasi	☐	Jururawat
☐	Penjual ubat	☐	Tidak pernah bertanya sesiapa Terus ke **Seksyen C**	☐	Lain-lain (sila nyatakan) _____

b. Adakah anda ingat tentang maklumat yang diberikan oleh mereka? Sila tandakan "X" pada semua yang berkenaan. Anda boleh tandakan lebih dari satu jawapan

☐	Bila perlu mengambil ubat berkenaan	☐	Berapa banyak ubat yang perlu diambil	☐	Kebaikan ubat tersebut
☐	Kesan sampingan ubat	☐	Apakah jenama yang baik	☐	Apakah ubat OTC yang sesuai untuk saya
☐	Berapa harga ubat tersebut	☐	Bagaimana perlu mengambil ubat tersebut? (contohnya: selepas makan atau sebelum makan)		
☐	Lain-lain (sila nyatakan) _____				

Bahagian C

1. Bagaimanakah anda mengukur pengetahuan anda tentang perkara di bawah?

		Tiada pengetahuan langsung				**Sangat berpengetahuan**
a	Tempat yang menjual ubat OTC	1	2	3	4	5
b	Adakah harga sesuatu ubat OTC memadai	1	2	3	4	5
c	Jenama-jenama ubat OTC	1	2	3	4	5
d	Perkataan yang digunakan pada label ubat OTC	1	2	3	4	5
e	Bagaimana ubat OTC berfungsi	1	2	3	4	5
f	Kesan sampingan dan risiko ubat OTC	1	2	3	4	5
g	Kebaikan ubat OTC	1	2	3	4	5

2. Sikap anda terhadap **ubat OTC sahaja**.

		Tiada pengetahuan langsung				**Sangat berpengetahuan**
a	Ubat OTC selamat digunakan kerana ia boleh dijual tanpa arahan bertulis doktor.	1	2	3	4	5
b	Ubat OTC selamat digunakan kerana ia mudah diperolehi.	1	2	3	4	5
c	Saya lebih suka merawat diri sendiri menggunakan ubat OTC berbanding berjumpa doktor, kecuali apabila saya mengalami sakit yang serius.	1	2	3	4	5
d	Oleh kerana ubat OTC di ambil tanpa arahan bertulis doktor, adalah sangat penting mengetahui semua perkara berkaitan ubat ini sebelum mengambilnya.	1	2	3	4	5
e	Ubat-ubat OTC biasanya tidak mempunyai kesan yang serius	1	2	3	4	5

3. Sikap anda terhadap ubat secara umum **(ubat OTC dan ubat yang diberi atas arahan doktor).**

		Sangat setuju				**Sangat tidak setuju**
a.	Saya lebih suka sembuh secara semulajadi	1	2	3	4	5
b.	Saya makan ubat sebagai jalan terakhir.	1	2	3	4	5
c.	Ubat membuatkan saya rasa lebih baik apabila saya sakit.	1	2	3	4	5
d.	Kesilapan penggunaan dan penyalahgunaan ubat adalah satu masalah dalam masyarakat	1	2	3	4	5
e.	Ubat yang diberi atas arahan doktor berfungsi lebih baik berbanding ubat OTC.	1	2	3	4	5
f.	Remaja lebih berkemungkinan membuat kesilapan dalam penggunaaan ubat berbanding orang dewasa.	1	2	3	4	5
g.	Kadang-kadang saya mengambil ubat yang sebenarnya tidak begitu perlu untuk saya.	1	2	3	4	5

Bahagian D

Anda akan menemui empat senario yang berbeza dalam bahagian ini. Sila bulatkan respon anda pada setiap kenyataan yang diberikan. Ingat, jawapan anda adalah sulit.

1. Pada satu malam Johari mendapat sakit kepala yang sangat teruk. Dia pergi ke tempat menyimpan ubat di dapur rumahnya dan menjumpai satu paket ubat yang mempunyai arahan berikut:

Digunakan untuk demam, sakit kepala, sakit otot dan demam selsema. *Ambil 2 biji pil setiap 4 hingga 6 jam sekali.*

Beliau mengambil 2 biji pil setiap 4 jam pada malam tersebut. Walaubagaimanapun, apabila beliau bangun tidur pada keesokan hari, rasa sakit berkenaan masih ada.Sekiranya anda adalah Johari, bagaimanakah anda akan menangani situasi ini?

	Sangat tidak mungkin				**Kemungkinan besar**
Saya akan ambil 2 biji pil tetapi dalam jangkamasa kurang daripada 4 jam.	1	2	3	4	5
Saya akan ambil lebih daripada 2 biji pil setiap 4 jam.	1	2	3	4	5
Saya akan ikut arahan sepenuhnya walaupun saya masih merasa sakit.	1	2	3	4	5
Sekiranya anda tidak mengikut arahan pada label, apakah kemungkinan anda akan memberitahu kawan anda?	1	2	3	4	5

2. Zaki menemui maklumat ini pada brosur sebuah kedai farmasi.

> Produk ini mempunyai asid lemak yang diketahui memainkan peranan penting dalam perkembangan kemampuan untuk belajar, ingatan, koordinasi dan kejelasan minda kanak-kanak dan orang dewasa.
>
> Ambil 1 tablet setiap hari. Anda akan merasa kesannya selepas dua minggu.

Zaki akan menduduki peperiksaan penting bulan hadapan dan sangat berharap akan mendapat keputusan cemerlang. Apakah nasihat anda pada Zaki?

	Sangat tidak mungkin				**Kemungkinan besar**
Ambil 1 tablet sehari seperti yang diarahkan walaupun beliau tidak merasa sebarang perubahan.	1	2	3	4	5
Ambil 2 tablet atau lebih sehari kerana 2 tablet berfungsi lebih baik daripada 1 tablet.	1	2	3	4	5
Ambil bersama sesuatu yang lain seperti herba, supaya ia lebih berkesan	1	2	3	4	5
Apakah kemungkinan beliau akan mencari lebih banyak maklumat?	1	2	3	4	5

3. Julia mempunyai masalah berat badan. Satu hari, beliau terjumpa satu iklan tentang sejenis ubat yang digunakan untuk membuang toksik di badan. Walaupun label produk berkenaan tidak memberi sebarang maklumat tentang perkara tersebut, beliau berpendapat ubat OTC ini berkemungkinan berkesan untuk mengurangkan berat badannya.

	Sangat tidak mungkin				**Kemungkinan besar**
Sekiranya anda adalah Julia, adakah anda akan mencuba produk berkenaan dengan harapan ubat tersebut akan mengurangkan berat badan anda?	1	2	3	4	5
Apakah kemungkinan, Julia akan mengalami kesan sampingan sekiranya beliau mengambil ubat tersebut untuk tujuan menurunkan berat badan?	1	2	3	4	5
Sekiranya dia tidak mengikut arahan pada label, apakah kemungkinan beliau akan memberitahu kawannya?	1	2	3	4	5
Apakah kemungkinan beliau akan mencari lebih banyak maklumat?	1	2	3	4	5

4. Daud pergi ke rumah kawannya untuk menonton perlawanan Piala Dunia. Perlawanan tersebut dihoskan oleh negara lain dan akan ditayangkan secara langsung di Malaysia pada pukul 1 pagi. Daud bersungguh-sungguh mahu menonton perlawanan tersebut tetapi merasa sangat mengantuk. Kawannya memberi beliau sejenis ubat yang boleh membantu untuk berjaga sepanjang malam dengan dos dua kali melebihi dos biasa. Label produk berkenaan menyatakan sesetengah orang berkemungkinan akan mengalami risiko sakit perut apabila mengambil ubat tersebut.

	Sangat tidak mungkin				**Kemungkinan besar**
Sekiranya anda adalah Daud, apakah kemungkinan anda akan menerima pelawaan kawan anda?	1	2	3	4	5
Apakah kemungkinan Daud akan mengalami kesan sampingan ubat tersebut pada keesokan hari.	1	2	3	4	5
Sekiranya dia tidak mengikut arahan pada label, apakah kemungkinan beliau akan memberitahu kawannya?	1	2	3	4	5

Kami sangat berminat untuk mengetahui lain-lain perkara yang anda fikir, perhati dan pandangan peribadi anda berkenaan remaja dan ubat-ubat diatas kaunter. Sila gunakan ruang di bawah untuk menyatakan sebarang pandangan yang terlintas difikiran anda.

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Terimakasih diatas masa yang anda luangkan untuk menjawab soal selidik ini, bantuan anda sangat dihargai.

Appendix 3

Human Ethics Approval

HUMAN ETHICS COMMITTEE

Application No: 2007-59 11 February 2008

Title: Consumer Socialisation of Over-the-Counter Medicines: A Comparative Study of New Zealand and Malaysian Adolescents

Applicants: Suriani Abdul Hamid

The Lincoln University Human Ethics Committee has reviewed the above noted application.

Dear Suriani

Thank you for your detailed response to the questions which were forwarded to you on the Committee's behalf.

Having read your responses, I am satisfied on the Committee's behalf that the issues of concern have been satisfactorily addressed.

I am pleased to give final approval to your project and may I, on behalf of the Committee, wish you success in your research.

Yours sincerely

Professor Sheelagh Matear
Acting Chair, Human Ethics Committee

cc: Dr David A Cohen (Commerce)
Dr Valerie Manna (Commerce)

PLEASE NOTE: The Human Ethics Committee has an audit process in place for applications. Please see 7.3 of the Human Ethics Committee Operating Procedures (ACHE) in the Lincoln University Policies and Procedures Manual for more information.

Appendix 4

Construction of variables

Construction of the background variables

1. Socioeconomic status

Research into understanding adolescents' SES has used varied measures. In the past, measures of adolescents' socioeconomic status have been highly variable. While many studies have used parents' occupation (Currie et al., 1997; Kohn, 1959; Torre et al., 2006; Wang & Kao, 2007), other researchers have used parents' education (Unger, Sun, & Johnson, 2008), family car ownership (Dengler & Roberts, 1996), weekly spending money (Currie et al., 1997; Unger et al., 2008), rooms per person in a home (Unger et al., 2008) and median household income in the post code (Unger et al., 2008). A combination of parents' occupation and education level (Marjoribanks, 1995; Yi et al., 2008) has also been used. Some researchers have used the Family Affluence Scale, which consists of items such as family car ownership, family holiday, having an unshared bedroom, and telephone ownership (Currie et al., 1997; Richter & Leppin, 2007).

Studies of adolescents' SES in New Zealand have used parents' occupation (Droomers, Schrijvers, Casswell, & Mackenbach, 2005; Melchior, Moffitt, Milne, Poulton, & Caspi, 2007; Thomson, Poulton, Kruger, & Boyd, 2000) and school SES decile (Darling et al., 2006; Scragg, Laugesen, & Robinson, 2002), as well as a combination of school decile and pocket money received (Wong et al., 2007). Meanwhile, most studies involving children or adolescents' SES in Malaysia have used family income (Khor et al., 2009; Omar Dev, Permal, & Omar Fauzee, 2009; Said & Hussin, 2006; Yusuf & Ali, 2007). As noted earlier, this study used three variables to measure adolescents' socioeconomic status; money spent in a week, parents' occupations and parents' level of education. The researcher adopted Kevin's (1995) approach where weekly money spending, parents' occupation and education were equally weighted and the scores totalled.

Parents' education was presented in a categorical format. The amount of money spent in a week, and father's and mother's jobs were measured in an open-ended format to obtain a

more accurate response than a check list. Details leading to SES categories are discussed below.

Money spent per week was measured using an open ended question. Responses were grouped as follows:

Table1: Money spent per week

Categories	**New Zealand**		**Malaysia**	
	f	%	f	%
0 - 5	18	6.5	41	17.6
More than 5 - 10	25	9.1	73	31.3
More than 10 - 25	43	15.6	88	37.8
More than 25 - 50	74	26.8	22	9.4
More than 50 - 100	59	21.4	-	-
More than 100	31	11.2	-	-
Missing	26	9.4	9	3.9
Total	276	100	233	100

Note: money received was in NZD for New Zealand respondents and in Ringgit Malaysia for Malaysia respondents.

Darling et al. (2006) and Wong et al. (2007) found that the median amount of money spent per week among high school students aged 14 to 17 in New Zealand was 35NZD. Wong et al.(2007) found that receiving 5NZD (5NZD x 5 school days = 25 NZD per week) for lunch was common among students aged 11 to 15 years in New Zealand. Besides receiving pocket money, it was not unusual for adolescents in New Zealand to have part-time employment. A report by the Department of Labour, New Zealand, indicated that as of December 2008, 54% of youth aged 15 to 19 participated in the labour market, where 27% worked fewer than nine hours a week. Darling et al. (2006) found that approximately 40% of high school students in their sample were in part-time employment. Based on this, money spent per week for New Zealand adolescents was grouped into three categories: Low SES ($0 - $25), Medium SES (more than $25 - $50) and, High SES (more than $50).

Since most previous studies in Malaysia regarding adolescents' SES have been based on family income, the grouping for Malaysian adolescents was based on focus group discussions. From these, a strategy was devised that defined Low SES adolescents as those spending less than RM10, Medium SES, from RM10 to RM25, and High SES, more than RM25. Unlike New Zealand adolescents who have part-time employment, it was

unusual for Malaysian adolescents to have part-time jobs. Therefore, in most cases the weekly money spent was fully provided by the family.

Categories for weekly spending were summarised. The SES reported was not based on a comparison of adolescents' weekly spending in the two countries, but with their peers in each country.

Table 2: Weekly money spending

SES	**New Zealand**		**Malaysia**	
	f	%	f	%
Low	86	31.2	50	21.5
Medium	73	26.4	151	64.8
High	91	33	23	9.9
Missing	26	9.4	9	3.9
Total	276	100	233	100

The second variable to measure socioeconomic status was parents' education. Tables 3 and 4 illustrate father's and mother's education respectively for both countries.

Table 3: Father's education

Categories	**New Zealand**		**Malaysia**	
	f	%	f	%
Some high school or less	94	34.1	68	29.2
Completed high school	71	25.7	116	49.8
Tertiary certificate or diploma	38	13.8	12	5.2
Bachelor degree	34	12.3	27	11.6
Masters/PhD	17	6.2	8	3.4
Missing	22	7.9	2	0.9
Total	276	100	233	100

Table 4: Mother's education

Categories	**New Zealand**		**Malaysia**	
	f	%	f	%
Some high school or less	87	31.5	62	26.6
Completed high school	83	30.1	129	55.4
Tertiary certificate or diploma	50	18.1	24	10.3
Bachelor degree	30	10.9	15	6.4
Masters/PhD	11	4.0	3	1.3
Missing	15	5.4	-	-
Total	276	100	233	100

For analytical purposes, these 5-category variables were then collapsed into three categories:

1. Some high school or less.
2. High school graduate as well as high school graduate with some tertiary. This category consisted of those who had completed a tertiary certificate or diploma but below the Bachelor's level.
3. Graduate. This category included parents who had a Bachelor, Masters or PhD degree.

The new categories were illustrated in the following tables.

Table 5: Father's education

Categories	**New Zealand**		**Malaysia**	
	f	%	f	%
Some high school or less	165	59.8	184	79
High school graduate or some tertiary	38	13.8	12	5.2
Graduate	51	18.5	35	15
Missing	22	8	2	0.9
Total	276	100	233	100

Table 6: Mother's education

Categories	**New Zealand**		**Malaysia**	
	f	%	f	%
Some high school or less	170	61.6	191	82
High school graduate or some tertiary	50	18.1	24	10.3
Graduate	41	14.9	18	7.7
Missing	15	5.4	-	-
Total	276	100	233	100

The third variable, parents' job, was recorded using an open-ended question. The jobs were then coded and grouped into three major groups: High SES, Medium SES and Low SES. High consisted of parents who were professional, large proprietors or managers. Medium was made up of skilled and semi-professional workers and Low was comprised entirely of unskilled workers and low ranking jobs. The results are presented as follows:

Table 7: Father's SES based on occupation

Categories	New Zealand		Malaysia	
	f	%	f	%
Low	122	44.2	155	66.5
Medium	47	17	32	13.7
High	76	27.5	30	12.9
Missing	31	11.2	16	6.9
Total	276	100	233	100

Table 8: Mother's SES based on occupation

Categories	New Zealand		Malaysia	
	f	%	f	%
Low	158	57.2	200	85.8
Medium	71	25.7	21	9
High	30	10.9	9	3.9
Missing	17	6.2	3	1.3
Total	276	100	233	100

As noted in the beginning of this subsection, research in understanding adolescents' SES had used a variety of measures. This study adopted Kevin's (1995) approach where parents' occupation, education and weekly spending money were equally weighted and the scores totalled. Point values were assigned for each (e.g. one point for low category of occupation, and so forth). Therefore;

SES = weekly spending + father's education + mother's education + father's occupation + mother's occupation.

This yielded a range from five to 15, which was transformed into three groups that determined the adolescents' SES; Low SES (scores ranges from 5 to 8); Medium SES (scores ranges from 9 to 11) and High SES (scores ranges from 12 to 15). As a result, adolescents' socioeconomic status in this sample is presented as follows.

Table 9: Adolescents' socioeconomic status

Socioeconomic status	New Zealand		Malaysia	
	f	%	f	%
Low	77	27.9	141	60.5
Medium	100	36.2	51	21.9
High	29	10.5	17	7.3
Missing	70	25.4	24	10.3
Total	276	100	233	100

In New Zealand, the modal category was the Medium SES, although the distribution was not quite balanced among the SES categories. It should be noted that there was a high percentage of missing data, which can be explained by the failure of participants to supply their fathers' occupation and the amount of their weekly pocket money. In Malaysia, a high percentage of the respondents were in the Low SES category. This was most likely a reflection of the high percentage of respondents whose parents worked in the low categories of occupation.

2. Family structure

Family structure was presented in a categorical format with seven categories (refer to the questionnaire in Appendices 1 and 2). Respondents who live with both parents were classified under intact families, otherwise the classification was single parent/extended single parent.

3. Religiosity

Five items, all measured with a 6-point rating scale, were used to record adolescents' level of religiosity, with 0 indicating not religious to 5 signifying being very religious. Responses were then grouped into 2 categories. Scores of 0, 1 and 2 were classified as low religiosity, while scores of 3, 4 and 5 were classified as high religiosity.

Table 10: Description of background variables

Variables	**Type of variables**	**Variables codes**
Socioeconomic status	Categorical	"1" for low, "2" for medium and "3" for high.
Family structure	Dummy	"0" for staying with single/extended single parent, "1" for staying with intact families
Religiosity	Dummy	"0" for low religiosity, "1" for high religiosity.

Construction of consumer socialisation variables

1. Family communication patterns

Family communication was captured using eight statements of a "yes" and "no" dichotomous format. A "Yes" answer for concept oriented statements meant the family exercise a concept-oriented type of family communication and a "No" answers meant the

family exercise a socio-oriented communication and vice-versa. The scores were summated and collapsed into two categories. The high category of score (5-8) indicates a concept-oriented type of family communication, while the low category (0-4) indicated a socio-oriented type of family communication.

2. Peer influence

To capture peer influence on adolescent consumer socialisation, the concepts of susceptibility to normative and informational peer influence were used. Peer influence was also measured using "yes" and "no" dichotomous answers. There were three statements for normative peer influence and five statements for informational peer influence. Due to the nature of the questionnaire, "Yes" answers were totalled separately for normative and informational peer influence and recoded as follows:

Normative

Score of 0-1 = low normative, score of 2-3 = high normative.

Informative

Score of 0-2 = low informational, score of 3-5= high informational.

3. Mass media

Ten options for mass media were listed to capture the media respondents would use if they wanted to find information about OTCs. TV advertisements, TV news, TV programmes about health/medicines were grouped as television broadcast; radio advertisements and radio news were grouped as radio broadcast; newspaper advertisements, newspaper news, magazine advertisements and articles in magazines were grouped as print media; while internet was a standalone. As the internet is a single item which measures either the respondent will use or not use, the rest of the media follow similar pattern.

Television broadcast

Score of 0 = will not use television broadcast, scores of 1-3 = will use television broadcast

Radio broadcast

Score of 0 = will not use radio broadcast, scores of 1-2 = will use radio broadcast.

Print media

Score of 0 = will not use print media, scores of 1-4 = will use print media.

4. Communication with other purchase relevant individuals

Four possible persons who may be consulted by adolescents in the consumption of OTCs were listed in the questionnaire. Communication with a doctor, nurse or pharmacist was classified as medical personnel, while a salesperson was classified as retail staff. As communication with retail staff is a single item which measures that either the respondent has consulted with retail staff or not, measures for medical personnel follow similar pattern.

Communication with medical personnel

Score of 0 = did not consult with medical personnel, scores of 1-3 = consulted with medical personnel.

Table 11: Description and coding for consumer socialisation variables

Variables	Type of variables	Variables codes
Family communication patterns	Dummy	"0" for socio-oriented type of family communication, "1" for concept-oriented type of family communication.
Normative peer influence	Dummy	"0" for low normative peer influence, "1" for high normative peer influence.
Informational peer influence	Dummy	"0" for informational peer influence, "1" for informational peer influence.
Television broadcast	Dummy	"0" for uses television broadcast, "1" for does not use television broadcast.
Radio broadcast	Dummy	"0" for uses radio broadcast, "1" for does not use radio broadcast.
Print media	Dummy	"0" for uses print media, "1" for does not use print media.
Internet	Dummy	"0" for uses the internet, "1" for does not use the internet.
Communication with medical personnel	Dummy	"0" for did not consult medical personnel, "1" have consulted medical personnel.
Communication with retail staff	Dummy	"0" for did not consult retail staff, "1" have consulted retail staff.

Construction of outcomes variables

1. Knowledge

Seven items measured on a 5-point scales were used to capture perceived knowledge about OTCs, with 1 indicating no knowledge at all and 5 signifying a great deal of knowledge. Responses were then grouped into two categories. Scores of 1 and 2 were classified as low knowledge, while scores of 3, 4 and 5 were classified as having a great deal of knowledge. The scores were summated. Total scores of 0 to 3 were coded as having low knowledge, while total scores of 4-7 were coded as having high knowledge.

2. Attitudes toward OTCs

Based on factor analyses, four items from Part 2 of Section C were grouped together. These four items were measured on a 5-point scale, with 1 indicating strongly agree (high confidence) and 5 indicating strongly disagree (not confident). Two items from the scenario questions in Section D (Jane question 2 and Danny question 2) also measured attitudes toward OTCs, with 1 indicating not at all likely (high confidence) to 5 indicating very likely (not confident). All the items were reversed, with 1 indicating not confident and 5 indicating high confidence. Responses were then grouped into two categories. Scores of 1 and 2 were classified as low confidence, while scores of 3, 4 and 5 were classified as a high confidence. The scores were summated. Total scores of 0 to 3 was coded as a low confidence category, while total scores of 4 to 6 were coded as a high confidence category.

3. Label reading

How carefully respondents read the label was measured on a 6-point scale, with 0 indicating a brief scan and 5 indicating reading every word. Responses were grouped into two categories. Scores of 0-2 were coded as not carefully reading the label, while scores of 3-5 were coded as reading the label carefully.

4. Perceived behaviour about OTCs consumption.

Nine items (refer Appendix 9) from a scenario-based questionnaire measured perceived behaviours about OTCs consumption, with 1 indiacting not at all likely (proper behaviour) to 5 very likely (improper behaviour). All the items were reversed, with 1 indicating

improper behaviour and 5 indicating proper behaviour. Responses were then grouped into two categories. Scores of 1 and 2 were classified as improper behaviour, while scores of 3, 4 and 5 were classified as a proper behaviour. The scores were summated. Total scores of 0 to 4 were coded as the improper behaviour category, while total scores of 5 to 9 were coded as the proper behaviour category.

The above procedures have been employed by Thorlindsson and Halldorsson (2010).

Table 12: Description and coding for consumer socialisation outcomes variables

Variables	Type of variables	Variables codes
Perceived knowledge	Dummy	"0" for low knowledge, "1" for high knowledge
Attitudes toward OTCs	Dummy	"0" for low confidence, "1" for high confidence.
Label reading	Dummy	"0" for not reading the label carefully, "1" for read the label carefully.
Perceived behaviour	Dummy	"0" for improper behaviour, "1" for proper behaviour.

Appendix 5
Establishing homogeneity using New Zealand versus Malaysia as a grouping variable

Scale items	Levene's test for equality variances	
	F	Sig
Religiosity		
I spend time in private religious thought and prayer	14.021	**.000**
Religion guides my daily behaviour	.608	.436
I enjoy participating in the activities of my religious organisation	.721	.396
I want to understand every detail behind the ideas in my religion/holy books	5.421	**.017**
I engage in public worship with others	6.803	**.006**
Knowledge about OTCs		
Which places sell OTCs	.652	.420
If the price of an OTC is reasonable	.005	.944
The different brands of OTCs	.308	.579
The terms used on OTCs labels	.704	.390
How OTCs work	2.196	.139
Negative effects and risks of OTCs	.136	.712
Benefits of OTCs	.066	.798
Attitudes toward OTCs		
OTCs are safe because they are sold without prescription	7.631	**.006**
OTCs are safe for use because they are easy to get	4.640	**.032**
Except for serious illness, I prefer to heal myself with OTC medicines than to see doctor	2.409	.121
Since OTCs are taken without a prescription, it is very important to know all about them	6.379	**.012**
OTCs do not usually have serious effects	10.361	**.001**
Scenario question 1		
I will take 2 pills but in less than 4 hours	9.146	**.003**
I will take more than 2 pills every4 hours	3.039	.082
I will strictly follow the instructions even though I still have the pain	.050	.823
If you don't follow the instruction on the label, how likely would you tell a friend?	1.991	.159
Scenario question 2		
Take 1 tablet a day as instructed even though after 2 weeks he doesn't notice any change in his abilities	.322	.571
Take 2 tablets or more a day because 2 tablets will work better than 1	.159	.691
Combines with something like herbs so it will work better	8.582	**.004**
How likely would he be search for more information?	.050	.823
Scenario question 3		
If you were Jane, will you try the medicine with the hope that it can reduce your weight?	4.435	**.036**
How likely is Jane to suffer side-effects if she's taking the medicine for weight loss?	22.267	**.000**

How likely would she be search for more information?	1.542	.215
Scenario question 4		
If you were Danny, how likely are you going to accept the offer?	7.650	**.006**
How likely is Danny to suffer side-effects of the medicine the next day?	1.136	.287
If he doesn't follow the instruction on the label, how likely would he tell a friend?	1.034	.310

Note: significance (p>.05), all statistically significant items were bolded.

Appendix 6

Test of normality using Kolmogorov-Smimov test (K-S)

Religiosity	Sig
I spend time in private religious thought and prayer	**.000**
Religion guides my daily behaviour	**.000**
I enjoy participating in the activities of my religious organisation	**.000**
I want to understand every detail behind the ideas in my religion/holy books	**.000**
I engage in public worship with others	**.000**
Knowledge about OTCs	
Which places sell OTCs	**.000**
If the price of an OTC is reasonable	**.000**
The different brands of OTCs	**.000**
The terms used on OTCs labels	**.000**
How OTCs work	**.000**
Negative effects and risks of OTCs	**.000**
Benefits of OTCs	**.000**
Attitudes toward OTCs	
OTCs are safe because they are sold without prescription	**.000**
OTCs are safe for use because they are easy to get	**.000**
Except for serious illness, I prefer to heal myself with OTC medicines than to see doctor	**.000**
Since OTCs are taken without a prescription, it is very important to know all about them	**.000**
OTCs do not usually have serious effects	**.000**
Scenario question 1	
I will take 2 pills but in less than 4 hours	**.000**
I will take more than 2 pills every4 hours	**.000**
I will strictly follow the instructions even though I still have the pain	**.000**
If you don't follow the instruction on the label, how likely would you tell a friend?	**.000**
Scenario question 2	**.000**
Take 1 tablet a day as instructed even though after 2 weeks he doesn't notice any change in his abilities	**.000**
Take 2 tablets or more a day because 2 tablets will work better than 1	**.000**
Combines with something like herbs so it will work better	
How likely would he be search for more information?	**.000**
Scenario question 3	**.000**
If you were Jane, will you try the medicine with the hope that it can reduce your weight?	**.000**
How likely is Jane to suffer side-effects if she's taking the medicine for weight loss?	**.000**
How likely would she be search for more information?	
Scenario question 4	**.000**
If you were Danny, how likely are you going to accept the offer?	**.000**
How likely is Danny to suffer side-effects of the medicine the next day?	
If he doesn't follow the instruction on the label, how likely would he tell a friend?	**.000**

Note: significance at 0.05

Appendix 7

Rotated Component Matrix

Rotated Component Matrix

	Component								
	1	2	3	4	5	6	7	8	9
KNOW1(function)	.770								
KNOW2 (brands)	.766								
KNOW3(risk)	.734								
KNOW4 (price)	.730								
KNOW5 (label)	.729								
KNOW6(benefits)	.729								
KNOW7(place)	.643								
Improper (John Q1)		.703							
Improper (Zack Q2)		.687							
Improper (John Q2)		.588						.304	
Improper (Danny Q1)		.568							
Improper (Jane Q1)		.554							
Improper (Zack Q3)		.441							
OTCs attitude (Qa)			.799						
OTCs attitude (Qb)			.788						
OTCs attitude (Qe)			.665						
OTCs attitude (Qc)			.575						
General attitude (Qe)				.704					
General attitude (Qd)				.638					
OTCs attitude (Qd)				.588					
General attitude (Qc)				.565					
General attitude (Qf)				.404		.382			
Improper (Danny Q3)					.760				
Improper (Jane Q3)					.729				
Improper (John Q4)					.467		.353		
General attitude (Qb)						.714			
General attitude (Qa)						.693			
Search info (Zack Q4)							.766		
Search info (Jane Q4)							.748		
Proper (Zack Q1) Reversed								.739	
Proper (John Q3) Reversed								.675	
General Attitude (Qg)		-.337						-.396	
OTCs attitude (Jane Q2)									.707
OTCs attitude(Danny Q2)									.660

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization

Appendix 8

Final solution

Dimensions	**Items**
Knowledge about OTCs	KNOW1(function)
	KNOW2 (brands)
	KNOW3(risk)
	KNOW4 (price)
	KNOW5 (label)
	KNOW6(benefits)
	KNOW7(place)
Attitudes toward OTCs	OTCs attitude (Qa)
	OTCs attitude (Qb)
	OTCs attitude (Qe)
	OTCs attitude (Qc)
	OTCs attitude (Jane Q2)
	OTCs attitude(Danny Q2)
General attitudes towards medicines	General attitude (Qe)
	General attitude (Qd)
	OTCs attitude (Qd)
	General attitude (Qc)
	General attitude (Qf)
Behaviour about consumption	Improper (John Q1)
	Improper (Zack Q2)
	Improper (John Q2)
	Improper (Danny Q1)
	Improper (Jane Q1)
	Improper (Zack Q3)
	Improper (Danny Q3)
	Improper (Jane Q3)
	Improper (John Q4)
	Proper (Zack Q1) Reversed
	Proper (John Q3) Reversed
Searching for information	Search info (Zack Q4)
	Search info (Jane Q4)

Three items; General attitude (Qb), General attitude (Qa) General Attitude (Qg) were removed as they did not fall to any of the categories. The items were further analysed using Cronbach's Alpha test.

Appendix 9

Reliability

Dimensions	Cronbach's Alpha	Items
Knowledge about OTcs	0.86	KNOW1(function)
		KNOW2 (brands)
		KNOW3(risk)
		KNOW4 (price)
		KNOW5 (label)
		KNOW6(benefits)
		KNOW7(place)
OTCs attitudes	0.619	OTCs attitude (Qa)
		OTCs attitude (Qb)
		OTCs attitude (Qe)
		OTCs attitude (Qc)
		OTCs attitude (Jane Q2)
		OTCs attitude(Danny Q2)
General attitudes	0.579	General attitude (Qe)
		General attitude (Qd)
		OTCs attitude (Qd)
		General attitude (Qc)
		General attitude (Qf)
Behaviour about consumption	0.612*	Improper (John Q1)
		Improper (Zack Q2)
		Improper (John Q2)
		Improper (Danny Q1)
		Improper (Jane Q1)
		Improper (Zack Q3)
		Improper (Danny Q3)
		Improper (Jane Q3)
		Improper (John Q4)
Searching for informatiom	0.695	Search info (Zack Q4)
		Search info (Jane Q4)

*Two items were removed; Proper (Zack Q1) Reversed and Proper (John Q3) Reversed as inclusion of these items results to low alpha value.